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Natural Resources of OREGON

Prepared by the - United States Department of the Interior - Stewart L. Udall, Secretary

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(Front Cover) Timber, Oregon's leading industry, heads for market from a Bureau of Land Management log pond.

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(Above) Majestic Mount Hood dominates these forested slopes of Oregon's Cascade Mountains and Timothy Lake.

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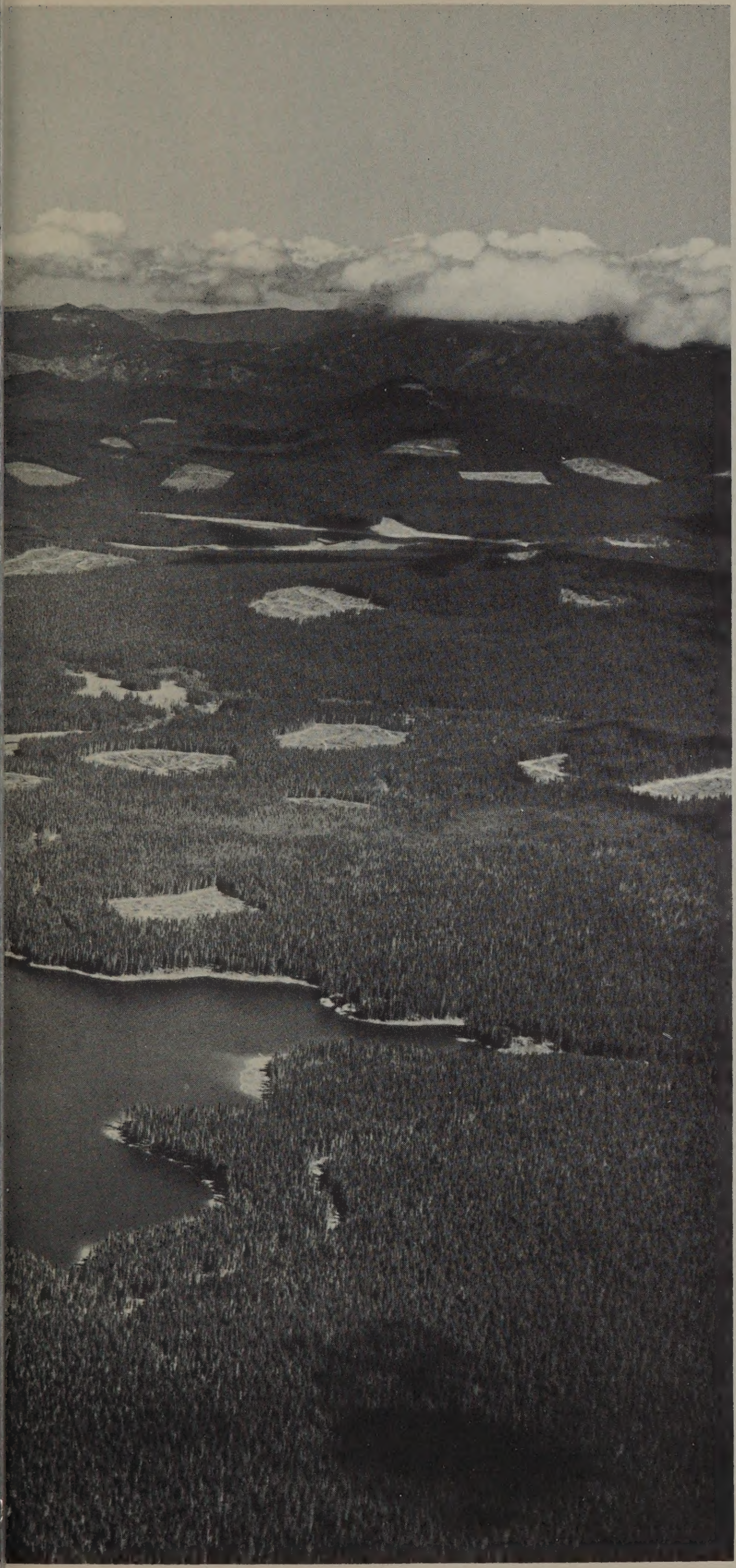

Natural Resources of Oregon

"The Beaver State"

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Oregon's Crater Lake National Park, snow-covered for eight months of the year, is a popular winter sports area.

The purpose of this booklet is to bring a new awareness on the part of the American people of our rich natural resource heritage, its history, its present, and its future. To know our land is to love it and cherish it and protect it from the ravages both of nature and man.

Stewart L Udall

Secretary of the Interior.

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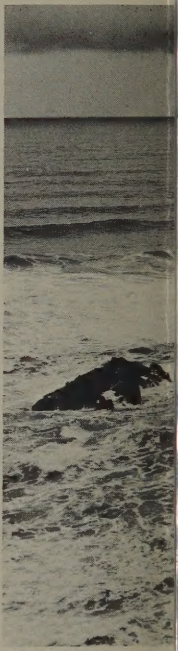
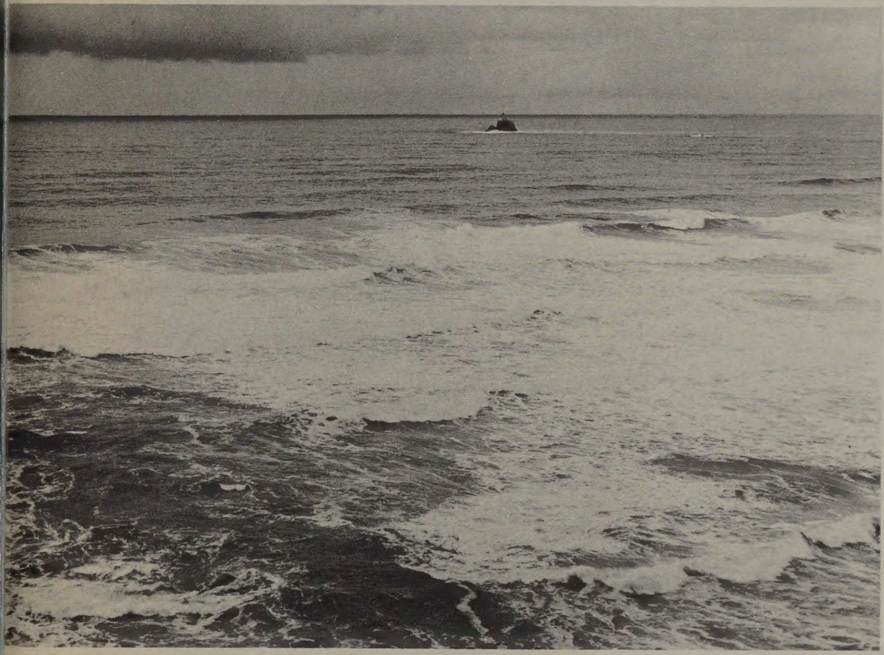


Introduction and History

Oregon is a land of contrasts. As one writer expressed it: "It rains. It snows. It scorches. It droughts. It suspends itself in celestial moments of sheer clarity that hearten the soul. Whatever else it may do, it challenges rather than enervates. Rather than complacency it breeds philosophy."

The consolations of philosophy may well have been the only reward of Sir Francis Drake, who sailed the *Golden Hind* into Oregon coastal waters in 1579, looking for the long-sought Northwest Passage to England, after his raids



Spectacular scenery of astonishing variety lies within Oregon's borders. River gorges, mountains, and the Pacific Ocean combine to make a land of many contrasts.

upon the Spanish Pacific Coast trading posts. Although the northernmost point of Drake's trip is disputed, he may have sighted the coast of Oregon. His voyage is significant for Oregon because he claimed the coast for England, a claim which Britain later said included the whole coast as far north as Alaska.

Drake named the area New Albion for his homeland, but abandoned his search for a Northwest Passage, being turned back by "most vile, thick, and stinking fogs." He headed for England by way of Pacific, concluding that there was neither a Northwest nor a Northeast Passage. But the prospect of a waterway across the broad American continent continued to fascinate sailing men and traders for three centuries, and to determine in part the fate of the Oregon Country.

Fur Trade

A century and a half ensued with little being heard of Oregon. In the 1760's Russia, padding her way through the deep Siberian forests, occupied both shores of the Pacific and their adjacent islands to reap immense profits in fine sea-otter and sea-lion pelts. Roused by this news, Spain, having exhausted stores of easily available gold in California, began to see advantages in the fur trade among the Indian villages of the Pacific Northwest.

The Spanish trader Juan Perez and his men were the first white men to confront the Indians, who were prosperous and friendly and who easily parted from their plentiful furs. But, the fur bubble burst for the Spanish when a trading expedition under Hezeta in 1775 was ambushed in the Northwest by the Indians.

Shortly after the massacre, Captain James Cook of England arrived in search of the elusive Northwest Passage. He put in at Nootka, on what is now Vancouver Island, and was well received by the Indians, who gave him fuel and otter skins for blankets. Aboard ship was the first American to confront the Oregon Country, John Ledyard, an adventurer who years later was to interest President Thomas Jefferson in the exploration of the Pacific Northwest and impress upon him the importance of this territory to American colonial expansion.

Cook's men rediscovered the value of the fur trade when they sold sea otter pelts to the Chinese at a huge and unexpected profit. Interest in the fur trade with the Indians quickly revived among the British, Spanish, and Russians. The stage was now set for the international tug-of-war that sent the Northern boundary of Oregon Territory moving up and down the coast for fifty years.

Following the Revolutionary War, Americans sent ships around Cape Horn to investigate the possibility of carrying Pacific furs to China on American ships.

Captain Robert Gray, exploring the Pacific Coast in 1792 on such a mission, anchored his ship in what seemed to be a bay. He lowered a boat and finding fresh water under his keel, suddenly realized that he had discovered the enormous river called by the Indians the Oregon. The land drained by the river became known as the Oregon Territory, but Gray renamed the river after one of his ships, the *Columbia*. He gave the United States its first claim to the area south of Vancouver and parallel 54°40′,

Many years of bickering were to follow regarding claims to Oregon with four powers now figuring in the competition for pelts and power. Vague Spanish claims on the south, sweeping British claims to the north, the Russians not to far away in Alaska, and the United States contesting all three contributed to the confusion. Oregon was a vast territory beginning in the east at the Rockies and ending at the Pacific, its north and south boundaries indeterminate and controversial.

19th Century Expansion

In 1805, members of the Lewis and Clark expedition became the first Americans to reach Oregon and the Pacific from the east, overland past the Cascade mountains and then down the broad Columbia. Clark, who had come through the rapids at The Dalles, gratefully paddled his canoes farther along the Columbia "that seemed as broad as the ocean we were seeking." They were greeted at the mouth by amazed Indians and torrential rains. The expedition set up winter camp at a spot protected from the wintry gales. When they returned home, they communicated the news that Columbia River was indeed a highway to the Pacific. After Gray's discovery, the exploration of Lewis and Clark gave the United States another claim to the area of Oregon.

This expedition was a sign of America's growing interest in the Territory and greater interest was aroused when accounts of the journey were published.

American and English fur traders rushed to set up posts along the river. In 1811, John Jacob Astor was able to precede the British into the lower Columbia area, where he set up the Pacific Fur Company, thereby basing new American claims on the fur trade. Astor, who called his little fort Astoria, was just setting up business in 1812 when war with England broke out. His Pacific Fur Company dangled between two flags for a year until it was sold to the British Northwest Company. But when a British naval captain seized the Astoria post itself, as distinguished from the company, it was done as an act of war. This left the British-

The grand canyon of the Snake River, popularly known as Hells Canyon, is one of Oregon's great scenic thrills.

owned company in virtual possession of the Oregon Country and the Columbia "highway to the sea."

In 1817, John Quincy Adams, as Secretary of State, insisted that the British return the fort or fight another war. The Treaty of Ghent provided for this return, but only whetted the edge of the controversy over boundaries. The British refused a compromise at the 49th parallel, and in 1818, a joint occupancy agreement was reached which satisfied no one.

Early Government

Until the 1840's the "law" in Oregon Territory was Dr. John McLoughlin, Chief Factor of the British Hudson's Bay Company. He enjoyed governmental powers derived from the British Crown, and was friendly to Americans living under his jurisdiction.

With the advent of "free land," homesteading was encouraged, and American settlers began to filter into the sparsely settled region. Soon Americans outnumbered all others and their farms made the trapping and trading industry less profitable for the British.

In the 1830's the missionary Lee brothers arrived in Oregon to convert the Indians. Their moral example was strong enough to influence the American settlers, who came to accept their authority as a kind of local government. When Jason Lee returned east in 1838, he carried a petition signed by 36 settlers asking Congress to admit Oregon to the Union as a Territory.

Congress did nothing for fear of provoking England, and the settlers attempted to set up their own government. In 1841 a meeting at the Willamette Valley Methodist Mission elected a "supreme judge" and several minor court officers, and made provisions for drawing up laws and a constitution. But the attempt came to nothing.

The threat of a serious Indian attack finally led to an effective provisional government, organized in 1843 and ratified in 1845 by special election. Meanwhile, in 1844, James Knox Polk was nominated for President of the United States on the "Make Oregon American" platform with its "Fifty-four-forty or Fight" slogan—meaning that America was now ready to seize Oregon all the way to Alaska even if it meant fighting for it. England, her bargaining power all but lost, signed a treaty in 1846 which ended the joint occupation and gave to the United States all continental land south of the 49th parallel.

Following the settlement of the boundary question, President Polk achieved one of the goals of his administration by securing territorial status for the region in 1848. He appointed General Joseph Lane of Indiana as Governor. Governor Lane took over the reins of the Territorial Government on March 3, 1849—the day before Polk went out of office.

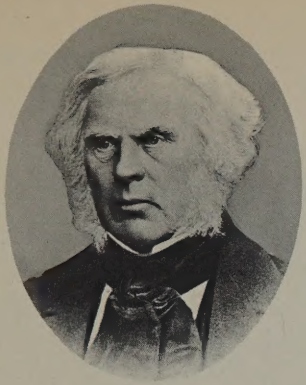
Territorial Period

Social and economic conditions improved rapidly in Oregon during the Territorial period. Roads and bridges were constructed, more and more ships entered the harbors, and while the population expanded, gold was discovered in several areas. Two universities and more than 20 academies were created and the seat of government was finally established at Salem, in the heart of the rich Willamette Valley.

As more settlers moved north of the Columbia River, the feeling grew that the huge Oregon Territory should be divided into manageable parts. In 1853, the Washington Territory was established, embracing the present State of Washington, western Montana, and northern Idaho.

Thus modified, the Oregon Territory took up the problem that had to be resolved before statehood could be realized—the question of slavery. The troubled state Constitutional Convention of 1857 voted for a popular referendum and in November of that year the citizens ratified the State Constitution and defeated slavery by a large majority. Oregon became a State on February 14, 1859.

Oregon stayed loyal to the Union, protecting the frontier against Indians who were taking advantage of the Civil War to conduct raids. Oregon's motto later became "The Union." The Indians continued to fight even after the war, but hostile tribes were finally moved to an Idaho reservation in the 1870's.



The house (right) of Dr. John McLoughlin is preserved today as a memorial to his leadership in the settling of Oregon.

When the Union Pacific Railroad replaced the Oregon Trail, the population and economy of Oregon boomed. Homesteads were established in the more isolated regions, and the eastern plains and ranges were used for large-scale wheat and livestock production. Steamship as well as rail commerce developed rapidly.

Oregon has been a progressive State contributing distinctive reforms and advances to the science of State government. Oregon was the first State to make full use of direct primary, initiative, referendum and recall, and the Oregon Plan became widely admired as an efficient blueprint for forward-looking State government.

Oregon Today

From a primitive fur trading post at the mouth of the Columbia, the city of Astoria has grown to be a symbol of Oregon's progress and prosperity; today it is the site of one of the largest fisheries in the world.

If Oregon's first pioneers would be surprised to see present-day Astoria, a trip up the Columbia would leave them speechless. On the Oregon-Washington border alone, dams at Bonneville, The Dalles—where Lewis and Clark despaired for their boats and men in the rapids—and McNary generate more than 12 billion kilowatt-hours of electricity annually.

Today's biggest deep-water vessels voyage over 300 miles up the Columbia, thanks to the navigation program made possible by dams and locks. Over 50 shipping lines call at Portland, a major seaport though over a hundred miles inland, and where ocean-going vessels cannot use the upper river, the thriving barge lines do.

A network of power transmission lines links the Columbia and its tributaries to Oregon's industries. First among these is the forest industry, including the manufacture of paper and lumber. Oregon has more standing saw timber than any other State and cuts more almost every year. Food products also rank high, and in metals, Oregon is the Nation's only nickel producer and a large producer of aluminum, the latter the direct result of low-cost hydroelectricity.

Oregon's varied climate and geography make it possible to grow a wide variety of crops profitably. Wheat from the eastern plains and apples and pears from the north are major products. Vegetables thrive and irrigation helps make possible the production of specialty crops like broccoli and carrots. All types of livestock are raised.

There were fewer than 100 white men in the whole Oregon region when Fort Astoria was sold to the British in 1813, but the State has about two million inhabitants on its 96,981 square miles today. State universities at Eugene and Corvallis, and more than a score of other colleges and universities constitute a rich educational resource.

The State flower is the Oregon Grape, a holly-like bush found mainly in the western part of the State; State bird is the Western Meadow Lark whose beautiful song may be heard in all areas of Oregon.

Oregon's major cities include Portland, Eugene, Salem, Medford, Corvallis, Springfield, Klamath Falls, Pendleton, Albany, Bend, Astoria, Roseburg, The Dalles, and Grants Pass.

Cities of Oregon

(Above) Oregon's white-marbled Capitol in Salem is topped with a statue symbolizing all of the State's early-day pioneers.

(Right) Medford, one of Oregon's major cities, is in the State's rich pear-producing area.

(Above) Astoria, the tiny trading post of 1811, has blossomed into a busy port city.

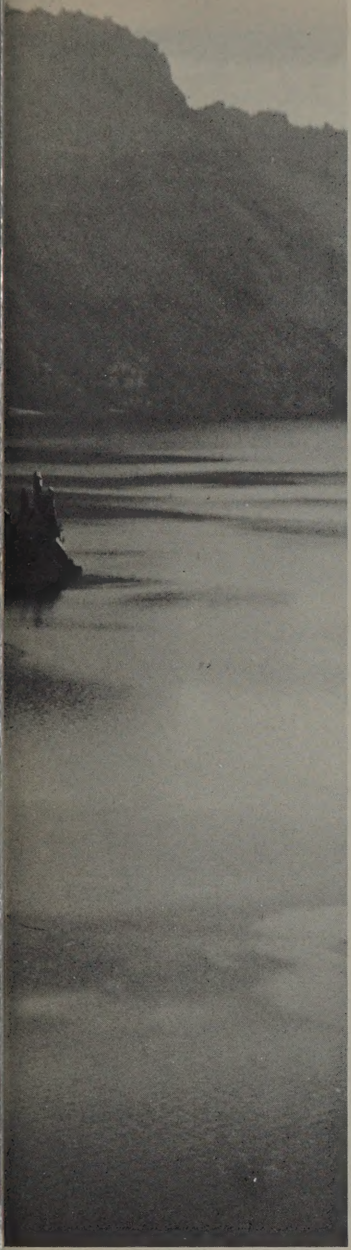
(Right) Eugene, a principal lumber center, is also the home of the University of Oregon.

Although it is many miles inland, Portland is the largest bulk-cargo shipping port on the Pacific Coast.

Crater Lake, awesome in its primitive beauty, was formed in the Cascade Mountains when the cone of a great volcano collapsed.

Physical Characteristics

Spectacular scenery of astonishing variety lies within Oregon's borders. Mountain ranges parallel the Pacific Coast; river gorges reach awesome depths; and inviting lakes dot the country that is divided into two distinct re-



Lava fields cover hundreds of acres near Mount Washington in the central Cascades. A modern higway cuts through them.

Kiger Gorge is the only example of glaciation in Oregon's famous southeastern cattle country.

gions—the area west of the Cascades, and the eastern plateau and mountains.

The Cascade Range, extending through Oregon in a general north-south direction, is the most important topographic barrier in the State. The Cascades boast large expanses of forest and snowfield; 11,245-foot Mount Hood is the highest peak in Oregon. It is some 100 miles from the coast and overlooks the Columbia Gorge.

Just west of the Cascades, between two north-south mountain ranges, lies the fertile Willamette Valley, drained northward into the Columbia by the Willamette River. The Valley is a broad lowland separated from the Pacific Ocean to the west by the Coast Range and from the interior mountains and plateaus to the east by the Cascade Range.

The Coast Range extends from the Columbia River in the north to where it meets the older structures of the Klamath Mountains in the south. West of the low-lying Coast Range is a scenic alternation of sandy beaches and rugged cliffs. The sandy shores with their odd outcroppings border on low, densely forested hills, part of the Pacific Rain Forest which receives about 77 inches of rain a year. These forested hills, composed mainly of Douglas fir, are the home of the animal that has given Oregon its nickname, the Beaver State.

Geologic Past

Oregon's fiery geologic past, characterized by widespread outpourings of molten lava and punctuated with explosive eruptions of glowing ash and volcanic debris, is recorded in the rock formations of the Cascade Range, the Blue and Wallowa mountains of the northeastern part of the State and the Klamath Mountains. Both the Klamath and Wallowa Mountains are the result of a complex geologic history which began more than 200 million years ago, when seas covered many parts of the United States.

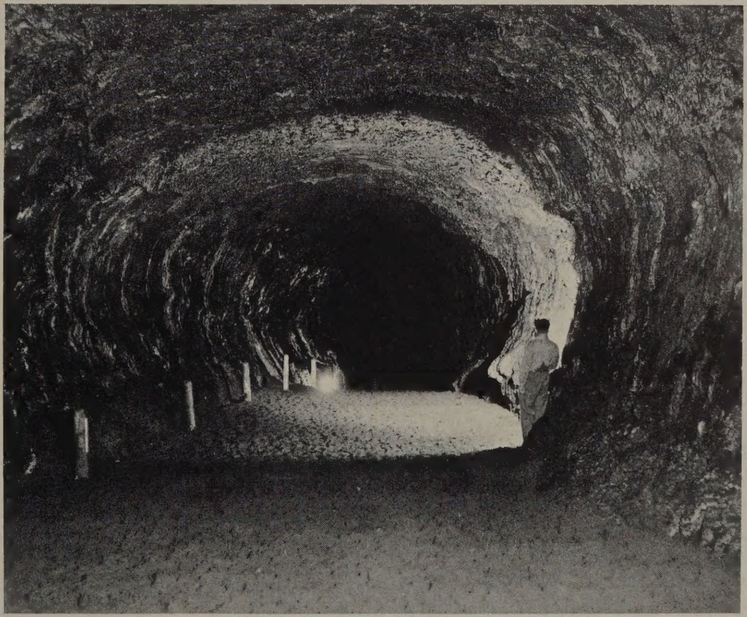
In these seas were deposited mud, sand, and limey ooze, together with some volcanic rocks. All these were later buried and subjected to deforming stresses. Time, heat, and pressure transformed the sediments first to shale, sandstone, and limestone, and ultimately to crumpled and contorted layers of slate, quartzite, and marble.

As these old rocks were being deformed, they were invaded by molten granite batholiths that—now cooled, uplifted, and eroded—are exposed as granitic cores in both the Klamath and Wallowa Mountains. Peridotite and serpentine have also been injected into some of the highly deformed rocks in the mountainous parts of the State.

(Above) A view of the coast south of Cape Foulweather. Here the ocean and lava flows met millions of years ago to form a still changing coast line.

(Left) Oneonta Falls, near Oregon's Columbia River highway, is one of the many lovely waterfalls fed by snow-fields of the high Cascade Mountains.

(Right) This mile-long tunnel at Lava Caves State Park was formed when lava cooled on the outside but left a core of molten lava which kept on moving.



While deep-seated deformations were creating the roots of mountains, renewed invasions of the sea, followed by more uplift and erosion, were changing the surface of the earth. The record of these events is scanty until about 60 million years ago, when lava flows began to pour out of vents and fissures beneath the sea in what is now the western third of Oregon.

This marine inundation of western Oregon persisted for at least 35 million years. During this period, the shoreline gradually receded westward to approximately its present position; volcanism was beginning in the land areas to the east, and at times the rivers feeding the western sea were choked with volcanic debris.

Much of the early volcanic activity was explosive, producing showers of ash and cinders. But later, in north-central and eastern Oregon, and in Washington, fluid flows of basaltic lava were quietly extruded from fissures in the earth's crust and spread for scores of miles across the surface of the land, filling depressions and ultimately forming a vast lava plateau that covered a major part of the Pacific Northwest.

Birth of the Cascades

As volcanic activity began to wane it formed new lava fields, ash deposits, and volcanic peaks in southeastern Oregon, and a chain of volcanoes arose along the present crest of the Cascades. Some of the youngest flows are so recent that the jumbled unweathered lava surface appears to have just cooled, and in many places the conical peaks, craters and calderas of the last volcanic episodes are essentially unmodified by erosion. The caldera at Crater Lake, most of the spectacular high Cascade peaks including Hood, Jefferson, and the Three Sisters, and many lava-dammed lakes were produced during this final phase of Cascade volcanism.

While the last floods of lava and ash were blanketing the Cascade Mountains and areas to the east, deep-seated forces were also active. The sedimentary deposits along the Pacific slope were slowly warped and folded along north-trending axes; the Northern Willamette Valley area was broadly downwarped, and in northeastern and southwestern Oregon more intense forces brought older rocks to the surface. As deformation continued, internal stresses were further relieved by faulting which broke the surface continuity of rock units, raising some blocks and lowering others.

Changes Continue

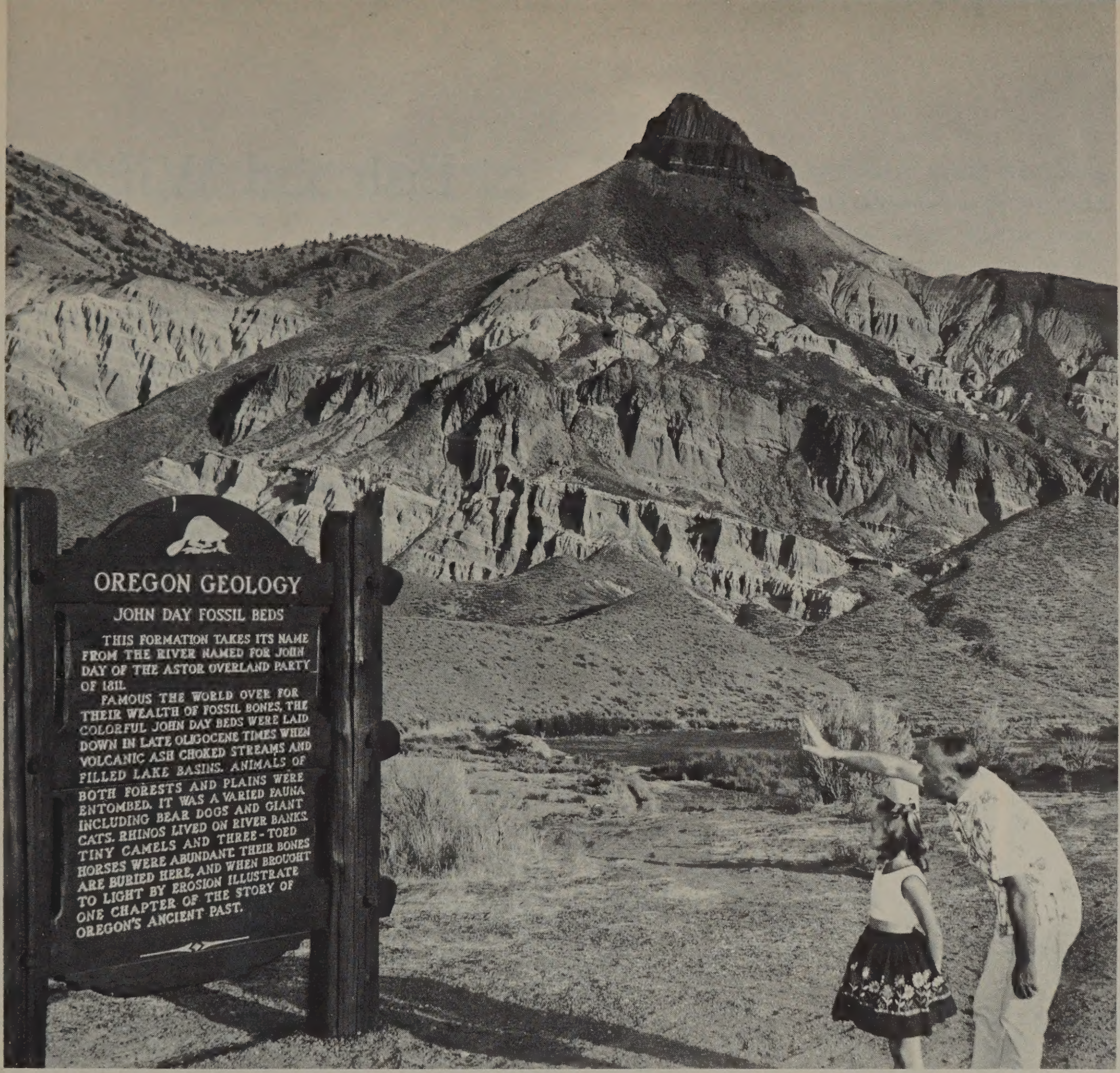
Surface irregularities produced by volcanism, uplift, and faulting are undergoing continuous, normal erosion, and Oregon's present landscape is still being modified. The coastal areas are being carved away by the sea; streams and rivers are slowly reducing the uplands and carrying debris to the lowlands; and in the high mountains ice and frost-action, landslides and avalanches are modifying the skyline. Far from being finished, Oregon's topography is in continual evolution.

Oregon's coast is fairly regular; among the bays which indent the land are Tillamook, Coos, Yaquina, Depoe, Nehalem, Nestucca, Netarts, Siletz, and Winchester.

The major river system, the Columbia-Snake, which forms part of the boundary both north and east, flows through a series of gorges. Once numerous waterfalls dotted the progress of the Columbia on its 1,270-mile way from British Columbia, giving the formidable Cascade Range its name. Where the river once tumbled and gushed, great systems of dams have ponded and calmed much of it into a navigable waterway. The mouth of the Columbia where it once passed over the ribs of the Coast and Cascade Ranges—causing Captain Gray to write, "The seven-shoaled horror of the Columbia"—has now been deepened and dredged to accommodate ocean-going vessels.

Several major rivers including the Nehalem, the Umpqua, and the Rogue, south of the Columbia, flow west into the Pacific. Most of the large lakes of Oregon are in the southern Cascades, including Upper Klamath Lake and Crater Lake in sunken Mount Mazama.

The climate of this western third of the State is as unlike the eastern two-thirds as the rumpled Cascade and Coast Mountains are unlike the rambling Deschutes Plateau. The Cascades form an effective barrier to the westerly winds


OREGON GEOLOGY
JOHN DAY FOSSIL BEDS
THIS FORMATION TAKES ITS NAME FROM THE RIVER NAMED FOR JOHN DAY OF THE ASTOR OVERLAND PARTY OF 1811.
FAMOUS THE WORLD OVER FOR THEIR WEALTH OF FOSSIL BONES, THE COLORFUL JOHN DAY BEDS WERE LAID DOWN IN LATE OLIGOCENE TIMES WHEN VOLCANIC ASH CHOKED STREAMS AND FILLED LAKE BASINS. ANIMALS OF BOTH FORESTS AND PLAINS WERE ENTOMBED. IT WAS A VARIED FAUNA INCLUDING BEAR DOGS AND GIANT CATS. RHINOS LIVED ON RIVER BANKS. TINY CAMELS AND THREE-TOED HORSES WERE ABUNDANT. THEIR BONES ARE BURIED HERE, AND WHEN BROUGHT TO LIGHT BY EROSION ILLUSTRATE ONE CHAPTER OF THE STORY OF OREGON'S ANCIENT PAST.

These colorful fossil beds at the John Day Fossil Bed State Park are estimated to be at least thirty million years old.

from the Pacific, causing most of the moisture to fall west of the mountains. The climate west is therefore temperate marine, with cool summers and mild winters averaging 65° and 43.1°, respectively, and heavy precipitation.

The Eastern Plateau

East of the Cascades lies the Deschutes Plateau, a land of valleys long ago filled and leveled with lava, broken only by the Blue Mountains in the north and the Steens Mountains of the southeast. But all is not flat in the east, for the Hells Canyon of the Snake River between Idaho and Oregon is the deepest gorge in the United States. Its greatest depth is 7,900 feet.

The Deschutes and John Day rivers, confined entirely within the borders of Oregon, drain the plateau into the Columbia. The Snake River, second largest in the State, forms more than half of the Idaho-Oregon boundary before shooting northward into Washington and its confluence with the Columbia. The Snake, along with the Owyhee, provide the water for irrigation of the southeast corner.

Small salt lakes and some larger fresh-water lakes dot the southern plateau; on the whole, the east is considerably less temperate and moist than the west. Precipitation ranges from 10 to 20 inches annually. The climate is more conducive to western pine than Douglas fir and large forests extend over the Blue and Wallowa Mountains in the north.

The southern Great Basin, a near-desert, is sparsely settled, but irrigation alleviates the aridity to some extent.

Fish and Wildlife

Canada goslings on the 184,871-acre Malheur refuge, one of the 12 Federal Wildlife refuges in Oregon. Eight species of geese are found in Oregon but only the large Canada nest in the State.

Nature was in an expansive mood when she selected the variety and abundance of wildlife for the Beaver State. And what Nature overlooked—in species of fish and game animals—man has made long strides to provide.

The angler finds an endless challenge in the many types of salmon, trout, and warm-water fish. The rifleman's quarry includes three kinds of deer, two kinds of elk, and the pronghorn antelope. For the shot-gunner, seven million waterfowl visit the State annually. and the supply of ring-necked pheasant and quail is plentiful. In a recent year sportsmen spent over $60 million on hunting and fishing in Oregon.

Commercial fisheries, too, are important to Oregon. The value of manufactured fishery products exceeds $22 million annually, mostly salmon, flounder, tuna and Dungeness crab. More than 2,500 fishermen are engaged in bringing ashore the varied catch, which also includes ocean perch, rockfish, and shrimp.

Among Oregon fish, salmon is of great importance, and the mighty chinook is the king of the catch. This robust, deep-bodied fighter usually ranges up to 45 pounds, but heavier ones frequently are landed. Oregon's record sport-caught chinook—long a world's record—was taken from the Umpqua River in 1910. It weighed 83 pounds. The chinook is found in almost every Oregon river where he has access to the sea. The largest runs are in the Columbia and its tributaries.

The silver salmon, important to commercial and sport fishermen, is found in almost every coastal stream. The sea-going sockeye is mainly important to the commercial fishery, but his landlocked replica—known as the kokanee—is of importance to the sport fishermen. The chum and pink salmon also interest commercial fishermen.

Oregon has an abundance of trout, foremost among them the widely distributed rainbow. His ocean variety, the fighting steelhead, is a periodic invader of many Oregon rivers.

The Eagle Creek National Fish Hatchery in Oregon and fish hatcheries in Idaho and Washington help stock the rivers and streams. A fish hatchery in Montana provides warm-water fish for the area west of the Rocky Mountains.

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Ocean and mountain varieties of the cutthroat trout are second only to the rainbow in angling importance in Oregon. The black-spotted cutthroat is well distributed throughout the Wallowa Mountains. The cutthroat offers some of the sharpest excitement a fishman can find.

The brown trout, a native of Europe, is well distributed in Oregon. The Deschutes River, East Lake, Paulina Lake, and Wickiup Reservoir are noted for producing large browns, many going above eight pounds. The brook trout, an import from the eastern United States, is found in Oregon's cold mountain streams and lakes.

Other trout important to the Oregon sport fishermen include the "lake" which reaches weights of 20 pounds and more, the Dolly Varden, and the Oregon whitefish.

Thirteen species of warm-water, spiny-rayed fish have been introduced to Oregon waters. Thousands of anglers find pleasure and recreation in fishing for crappie, small and largemouth bass, blue gill, yellow perch, and catfish.

Places to fish are abundant. The State of Oregon administers 29,000 acres of public fishing lakes and 15,000 miles of fishing streams. The State also owns 49,000 acres of hunting areas open to the public. In addition, twelve national forests are open to fishing and hunting.

Waterfowl

Oregon is one of the most important states in the Nation as a nesting ground for migratory waterfowl. There are 17 species of pond and diving ducks and nine species of geese. Most common of the ducks is the mallard, but also important are the pintail, baldpate, gadwall, wood duck, green-winged teal, redhead, scaup, and canvasback. There also are the shoveler, cinnamon teal, blue-winged teal, American goldeneye, bufflehead, oldsquaw, harlequin, and ruddy.

Eight of the fifteen species of geese in North America are found regularly in Oregon, and one—the emperor—occurs as a rare migrant along the Oregon coast. The large Canada goose is the only species which nests in the State. Other geese species found in the Beaver State are the western Canada, lesser Canada, cackler, lesser snow, Ross, white-fronted, and black brant.

Eight of the 12 Federal wildlife refuges in Oregon are host to the great flights of ducks and geese. Chief among the refuges is the Hart Mountain National Antelope Refuge, with 240,000 acres. This refuge also serves as a habitat for the pronghorn antelope, mule deer, sage grouse, and valley quail.

Other refuges for waterfowl in Oregon with the acreages, and other wildlife served include:

Malheur (184,871 acres), whistling swans, sage grouse, valley quail, sandhill cranes, white pelicans, herons, ibises, shorebirds, pronghorns, and mule deer.

Klamath Forest (15,226 acres), water birds.

Upper Klamath (12,532 acres), herons and cormorants.

Cold Springs (3,116 acres), herons and shorebirds.

McKay Creek (1,836 acres), herons and shorebirds.

Lower Klamath (1,340 acres), herons, shorebirds, and California quail.

Charles Sheldon Antelope Range (627 acres), pronghorn, mule deer, and sage grouse.

Smaller National Wildlife Refuges are:

Cape Meares (138 acres), shorebirds, band-tailed pigeons, and black-tailed deer; Oregon Islands (21 acres) and Three Arch Rocks (17 acres), both for cormorants, gulls, murres, and puffins.

The recently authorized Willamette National Wildlife Refuge is 7 miles south of Corvallis. About 2,000 acres will be planted to rye grass, clover, sudan grass and field corn for waterfowl use, and another 1,000 acres will be ponded in low areas. The refuge is expected to serve great numbers of the western Canada goose, mallards and pintails, and to a lesser extent, the whistling swan, a protected species.

Big Game

Deer, elk, and pronghorn antelope provide generous rewards for the hunter, camera enthusiast, and sight-seeing tourist.

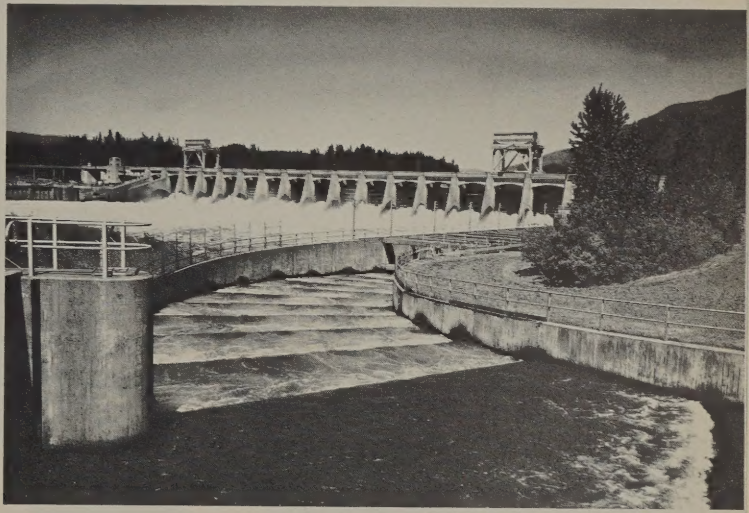
Deer is the most numerous big game in the Beaver State. The black-tail is found from the Pacific Ocean to near the crest of the Cascade Mountains and is unique in that it lives only in the Pacific Coast States. The mule deer makes his home in the pine forests and sagebrush deserts of Eastern Oregon and attracts the greatest number of hunters. The white-tail is relatively scarce, but can be found on both sides of the Cascades.

The Roosevelt elk inhabits the western part of the State, and Rocky Mountain elk are east of the Cascades. Their numbers have increased substantially since the early 1900's, when market hunting seriously depleted the herds.

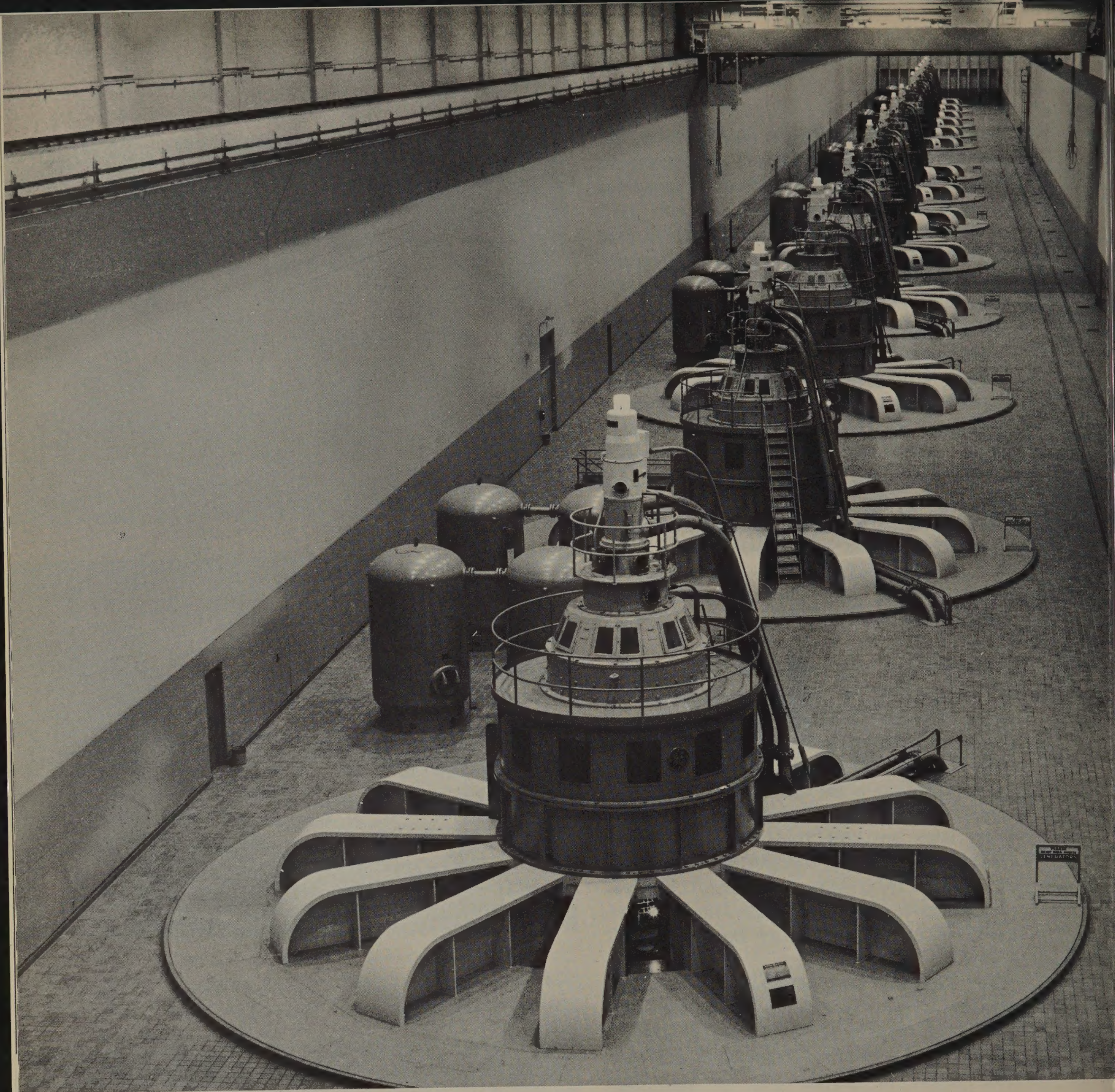
The pronghorn antelope is the least numerous of big-game animals in Oregon, found only in the semi-arid regions in the southeast section of the State. Limited hunting of this popular trophy animal is permitted, but the demand still far exceeds the supply. A comparative newcomer to Oregon is the Rocky Mountain goat, introduced to the Wallowa Mountains in 1950. This species is protected with the hope that its numbers will increase to permit trophy hunting. Other game animals are cotton tail and jack rabbits, cougar, bobcats, raccoon, fox, and coyote.

The potential for a continued abundance of fish and wildlife in Oregon is excellent. The successful propagation and stocking of trout and salmon promise continued expansion of these sport fisheries. The greatest potential for fishing development is the many lakes in the Cascade, Blue, Wallowa, and Steen Mountains. These lakes are now inaccessible except for difficult trails, but they will grow in importance as accessibility is improved. Also, Oregon's open and extensive coastline offers ample opportunity for an increase in shore and ocean sport fishing.

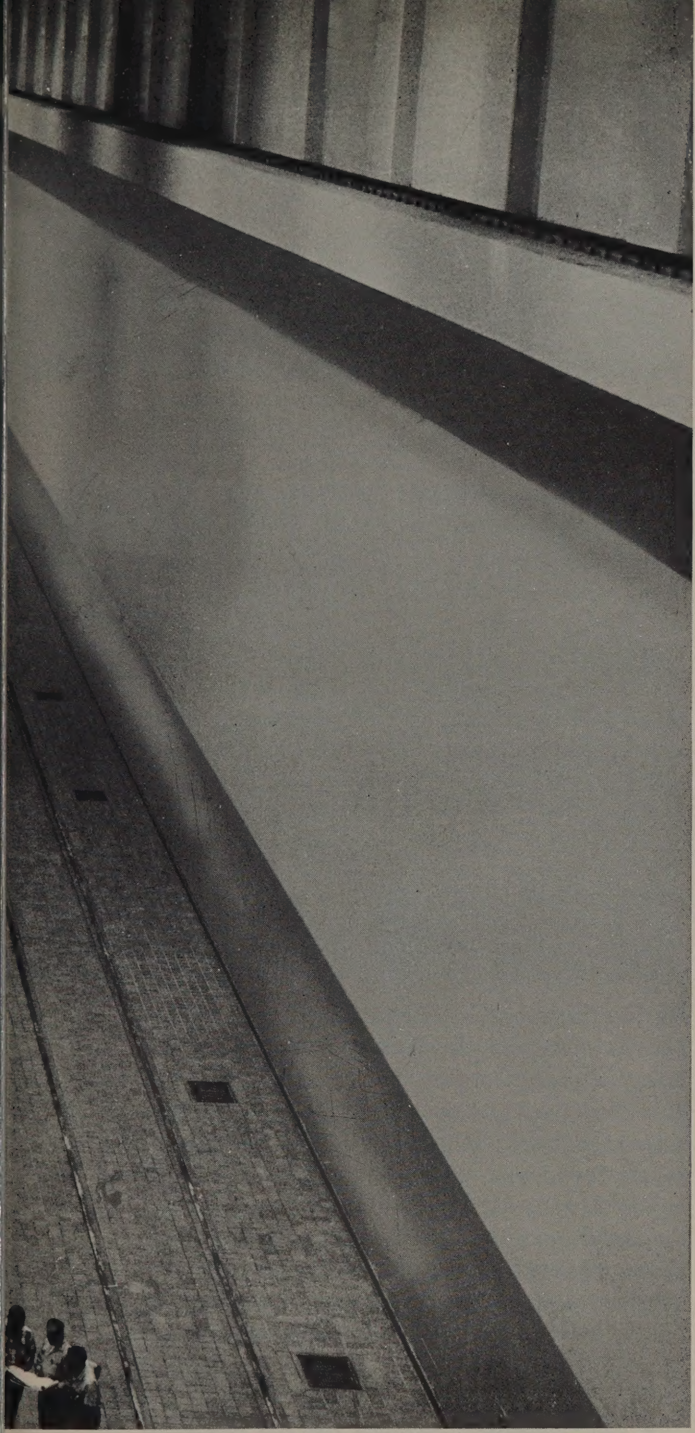
The Bureau of Land Management cooperates with the Oregon State Game Commission and the Fish and Wildlife Service in improving wildlife habitat on public domain lands and the O&C forest in Oregon (See p. 39). For example, desert bighorn sheep have been reintroduced by the State Game Commission on the Bureau of Land Management Steens Mountain Management Area in southeastern Oregon.



(Top) Pronghorn antelope, least numerous of Oregon's big-game animals, are found in the southeastern part of the State. (Center) Fish use ladders such as this at Bonneville Dam to migrate upstream to spawn. (Bottom) Rod bends when a chinook—king of the salmon strikes.



Water and Power



From the very beginning, water has played a tremendous role in Oregon's development. Traders and trappers, explorers and pioneers used the rivers for transportation and as a means of livelihood.

The Columbia River is one of Oregon's most important natural resources. This mighty river, because of its enormous flow and rapid fall, is a great source of water power. As such, it ranks above the Mississippi and the Volga; it dwarfs the Ganges, the Euphrates, the Yangtze, the Yukon, and the Amazon in value to man.

About one-third of the hydroelectric potential of the Continental United States is in the Columbia River Basin. The Columbia's waters coursing to the ocean mean life and progress to a great region and to our country.

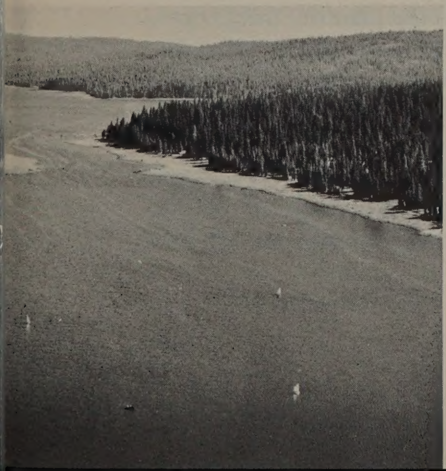
The Columbia has its headwaters in Canada, flows south through Washington, and forms the State boundary between Oregon and Washington from about 20 miles upstream from McNary Dam. The Columbia is navigable for ocean-going vessels as far as Portland. More than 50 steamship lines serve the Columbia River ports, with service to the Atlantic and Gulf coasts, the Orient, Europe, Africa, and South America, as well as calls along the Pacific Coast. The river throughout its entire length in Oregon is navigable by barge, with port facilities at Portland, The Dalles, Arlington, and Umatilla.

One of Oregon's other major rivers—the

(Left) Generating units of The Dalles Dam on the Columbia River, 88 miles east of Portland.

(Bottom left) Water sports are popular on the Bureau of Reclamation's Howard Prairie Reservoir.

(Bottom right) The Deschutes Project is part of Oregon's 1.5 million acres of irrigated land.



Snake—flows into the Columbia just over the Washington line. Other principal tributaries of the Columbia River in Oregon are the Umatilla, John Day, Deschutes, Hood, Sandy, and Willamette Rivers.

The Willamette and its tributaries drain the Willamette region, a rectangular trough of level and rolling farm and timber lands, about 180 miles long from the Columbia River to the Calapooya Mountains and 60 miles wide from the Cascades to the Coast Range.

The Willamette region has a widely diversified agriculture, the greatest commercial and industrial development in Oregon, and two-thirds of the State's population. Lumbering is an important industry in the region.

Water Supply

Water resources of the State of Oregon are ample, but their distribution is unequal. The greatest water suppliers are concentrated mainly in the western part of the State; the eastern part is relatively dry, and the surface-water supply is inadequate to meet the total demand.

Compounding the problem is the wide disparity between rainfall in the East and in the West. The heavy winter precipitation and resulting large streamflows cause floods and flood-control problems on many rivers. Conversely, the meager precipitation and low flows over the whole State during the late summer months create pollution problems, provide insufficient water for preservation of fish life, and result in heavy demands upon the available supply for municipal, industrial, and agricultural use.

Industrial use of water is not as great as in many other States, but will probably continue to increase. The present largest industrial use is for processing agricultural and forest products. The most serious pollution problem is from the pulp and paper mills. However, the industry is attempting to reduce the amount of wastes, and purify the used water before disposal. Nevertheless, increasing pollution from industry is posing problems for recreation use of the lower part of the Willamette. Salmon on this reach of the river are endangered by water pollution and other factors.

The greatest single use of water is for irrigation. The rate for domestic and public water supply is about average for the Nation—150 million gallons per person per day. Recreation use of water is growing in Oregon, as is elsewhere in the country.

There are approximately 50 reservoirs of over 500 acre-feet capacity in the State, with a total usable capacity of 4.3 million feet (an acre-foot contains 326,700 gallons). These reservoirs include Owyhee in southeast Oregon, the John Day, the Tiber, the Swift and the Upper Klamath. The reservoirs are used for irrigation, flood control, power, recreation, fish and wildlife habitat, domestic and industrial water, and other purposes.

More than 1,000 lakes are scattered around the State, some glacier-fed, some spring-fed. These lakes are important for recreation, such as fishing and waterskiing, and as habitats for fish and waterfowl. The larger ones, such as Klamath Lake, provide water storage areas for irrigation and industrial and public supply.

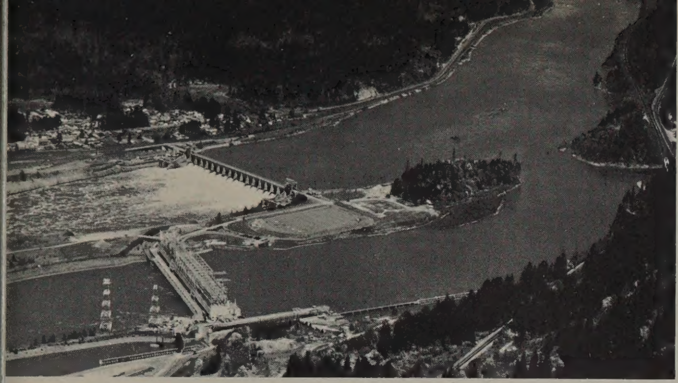
Ground Water

Significant ground water supplies are available in the coastal basins, the Willamette River trough, and locally on the alluvial valley floors throughout the State. The supplies are being tapped increasingly for irrigation, municipal, and industrial use. Variation in subsurface materials result in marked local differences in water-yielding capabilities and the depths at which adequate supplies can be reached.

Careful integration of the surface and ground water supplies is necessary to assure adequate supplies of water for the future through economic development and wise management.

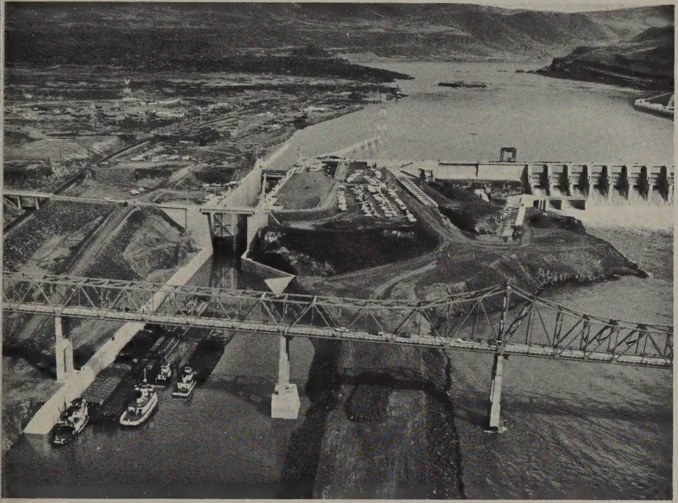
Power Resources

A basic economic resource for the State of Oregon is its hydroelectric power development. About 90 percent of the electric energy produced in the State is generated at 60 hydroelectric plants with an installed capacity of over 3 million kilowatts. This represents about ten percent of the Nation's installed hydroelectric capacity. Plants built by the Federal Government constitute nearly two-thirds of the installed capacity, with privately owned and

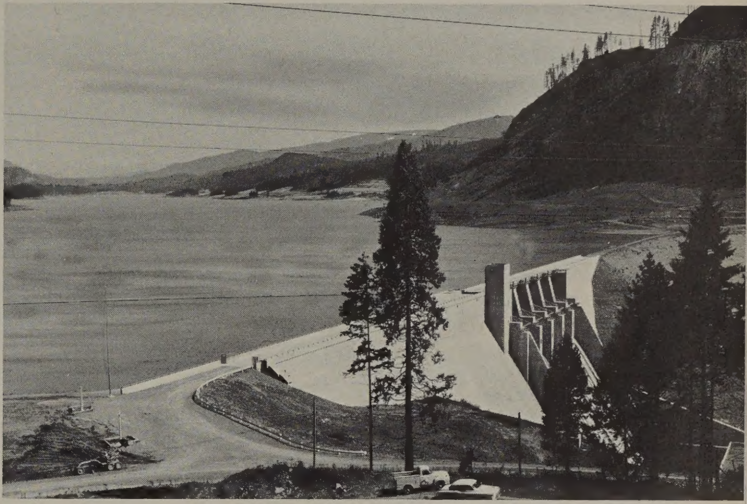


Bonneville Dam is one of the three Federal power projects located on the lower Columbia River.

Water from Owyhee Dam and Reservoir serves about 85,000 acres of land in southeastern Oregon.



The U.S. Army Corps of Engineers' The Dalles lock and dam aid navigation on the Columbia River.



Lookout Point Dam stores water for irrigation and electricity in the rich Williamette River Valley.

municipal plants making up the balance.

Electric power is distributed throughout the State primarily through four privately owned utility firms which serve over 80 percent of the customers in the State. Eleven municipalities, 17 cooperatives, and four Public Utility Districts provide electric service for the balance of the power customers.

Oregon's three largest hydroelectric plants are Federal projects located on the lower Columbia. They are Bonneville, McNary, and The Dalles. A fourth, the John Day Project, is scheduled for completion in 1967.

In the Willamette River Basin, Federal hydroelectric projects are Lookout Point, Dexter and Hills Creek on the Middle Fork of the Willamette River; Detroit and Big Cliff on the North Santiam, and Cougar on the North Fork, of the McKenzie River. Portland General Electric Company, a private utility, has six projects on the Sandy, Clackamas, and lower Willamette Rivers, and Eugene Water & Electric Board's Carmen-Smith, Walterville, and Leaburg projects are on the McKenzie River, another tributary of the Willamette.

Pacific Power & Light Company, a private utility, has 28 Oregon projects on the Rogue, Klamath, Umpqua, Deschutes, and Hood Rivers.

On the Snake River—along the Idaho-Oregon border—are the Idaho Power Company's Brownlee and Oxbow dams.

The Bureau of Reclamation has a hydroelectric project at Green Springs on Emigrant Creek in southern Oregon.

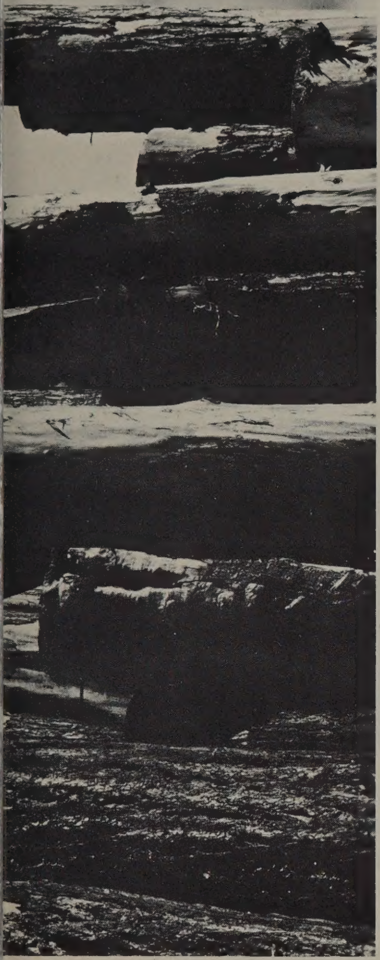
Oregon ranks fifth in the Nation among those States with significant undeveloped hydroelectric power, with nearly 6 million kilowatts of capacity listed by the Federal Power Commission as having engineering and ecomomic feasibility.

Oregon's forests cover nearly half the State—about 30 million acres—and account for nearly 60 percent of its economy. The 75,000 full-time workers employed in the forest industry produce about $1.3 billion worth of forest products per year which are marketed widely.

Forests and Land

The Federal Government administers 52 percent of Oregon's total acreage, or more than 32 million acres. This includes forests, agricultural land, land used for power development, range land, and land held in trust for the Indians.

Half the total area of Oregon is classified as forest—about 30 million acres. Commercial forests account for 26 million acres, and the rest is used for various purposes, including recreation, wildlife, and watershed protection. State



Sheep raising is an important part of Oregon's agricultural economy. In a recent year over 150,000 sheep shared some 13 million acres of public grazing land with about 260,000 cattle and horses, 300,000 deer, 5,500 elk, and 11,000 antelope. Oregon's woolen products are world famous.

and local governments own four percent of the commercial forests, private owners 38 percent, and the Federal Government 58 percent.

Ponderosa pine predominates in eastern Oregon, and Douglas fir in the west. Other principal timber species in the east are lodgepole pine, western larch, Engelmann spruce, Idaho white pine, sugar pine, and Douglas fir.

Western Oregon forests include substantial mixtures of western hemlock, true fir, incense cedar, western red cedar, Port Orford cedar, sugar pine, ponderosa pine, and white pine. Some commercial hardwood species are found in western Oregon as well, including alder, white oak, maple, ash, and cottonwood.

Oregon leads the Nation in volume of standing saw timber and annual value of its forest products—about $1.3 billion every year. These products include lumber, plywood, poles and pilings, pulp, paper, hardboard, and Christmas

(Above) Fertile Willamette Valley is a prosperous truck-farming area, famous for its fruit and vegetables.

trees. Full-time labor for more than half the State's industrial employees is provided by this industry. Oregon's forests account for nearly 60 percent of the State's economy and the forest industry employs about 75,000 full-time workers, while thousands of other people derive their income directly or indirectly from the forest resources.

Resources found within the National Forests include a large proportion of the water used for industrial, agricultural, domestic, and recreation purposes. They also embrace more than 11½ million acres of the commercial forests of the State, sufficient range to graze over 175,000 head of livestock, recreation facilities that attract nearly 8 million visits a year, excellent fishing opportunities, and enough game to account for a legal harvest of 75,000 big-game animals a year.

The major enemies of Oregon's forests are insects and diseases, which cause 10 times as much damage as fires. To help control these losses, forests are surveyed annually by airplane to locate threatened areas.

Progressive State legislation and the active cooperation of industry have resulted in a steady reduction of fire losses. To maintain this major resource, public and private forest managers also plant and reseed cut-over lands which do not satisfactorily regenerate themselves.

Agricultural Products

Over the years the percentage of Oregon land in farms has increased, and the size of the average farm has nearly doubled since 1925. The number of farm operators has decreased slightly since that year, however, with about 42,000 currently active on farms that average 500 acres.

Wheat is the chief Oregon crop; corn, barley, oats, hops, hay, grasses, sugar beets, potatoes, fruits and berries, nuts, and truck vegetables are

(Below) Harvesting Oregon's rich timber resources, as in this Willamette National Forest scene, requires muscle and a variety of modern machines.

(Above) Freshly mowed fields, bales of hay, oak woodlands and farm buildings combine to form this rural scene near Salem in the Willamette Valley.

also grown. Irrigation aids in the production of specialty items such as cantaloupes, asparagus, brussels sprouts, rhubarb, and watermelon.

The eastern plateau of Oregon grows primarily wheat; intensive truck farming is done in the west, particularly the Willamette Valley. Irrigation in the Owyhee Valley as well as other dry parts of the State helps reclaim land for agriculture.

Livestock production is important to the State, and cattle, sheep, and poultry are raised. Dairy farming is important in western Oregon. Including livestock, annual value of Oregon's agricultural production exceeds $400 million.

Range Usage

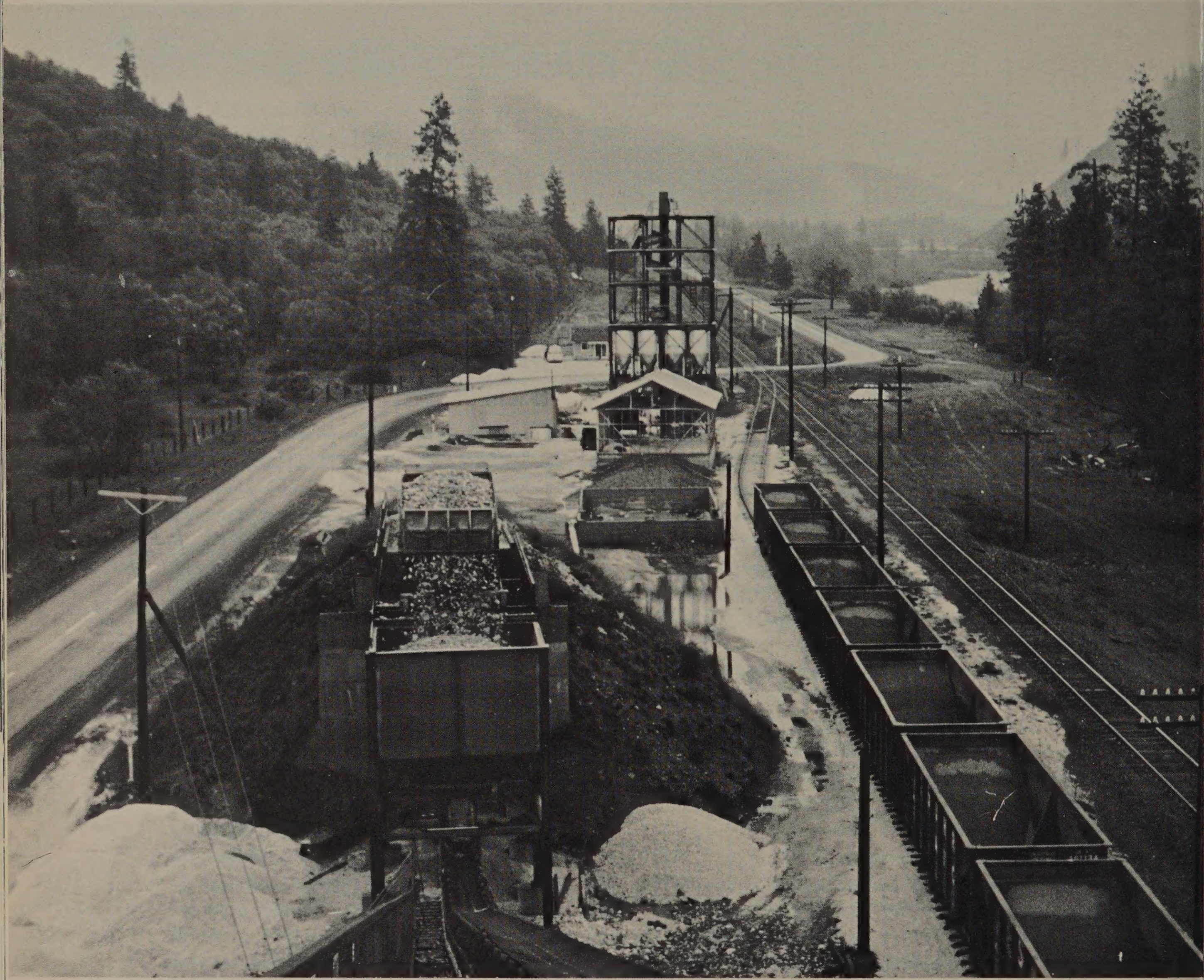
Livestock grazing is a major use of the open rangelands east of the Cascades. In a recent year over 150,000 sheep and 260,000 cattle and horses grazed on over 13 million acres of public domain land in Oregon.

Whenever range land is allocated for livestock grazing, provision is made for wildlife. Domestic animals share the range with approximately 300,000 deer, 5,500 elk, and 11,000 antelope. The Federal Government charges a grazing fee for livestock use of Federal range, some of which is returned to the State of Oregon, while the remainder is turned over to the United States Treasury. A portion of the grazing fee revenues and additional appropriated funds are used for soil and moisture conservation, range vegetation and other improvements, grazing administration, and range management research.

Indian Lands

Indian lands in Oregon held in trust total nearly 700,000 acres. This includes reservation land, forests, rangeland, and irrigation projects. Records indicate that about 366,700 acres of this land is forested; 540,000 acres, some of which are forested and are included in the acreage figure for forested land, are used for grazing. About 200 acres are under irrigation.

Mineral Resources



This plant near Gold Hill processes quartz into silica sand for industrial use in producing metals and glass.

An intensive oil search is underway off Oregon's coast. When the ocean's deposits are found, drilling platforms such as this used off the Gulf coast will be seen in the Pacific near Oregon in recovering fossil fuels.

Oregon, producing some $55 million worth of metals, nonmetals and fuels each year, ranks 38th among the States in the annual value of its mineral output. Even though the Beaver State is not a leading mineral supplier, mineral and associated industries provide jobs for more than 10,000 of its people, and new companies—predominantly firms that process rather than extract minerals—are being attracted to Oregon.

Gold was discovered in Oregon before it was found in California, and the yellow metal still brings wealth to the State today. But now the black gold of petroleum holds more promise for Oregon's future. Major oil and gas companies are exploring intensively for deposits in the Willamette Valley and off the Oregon Coast. Substantial reserves of coal are found in Coos County, providing a potential source of power for Oregon's growing industries.

Leasing of oil and gas reserves off the Oregon Coast, beginning October 1964, with a sale of leases involving 800,000 acres of submerged lands, may open a promising source of fuel for Oregon's expanding industries. Sales of mineral leases are administered by the Department of the Interior's Bureau of Land Management. Technical developments now enable oil companies to drill in the depths encountered on the West Coast's Outer Continental Shelf for possible hidden oil and gas reserves.

Mineral Output

Although mineral output is reported by all 36 of Oregon's counties, the most important producers are Baker, Clackamas, Coos, Crook, Deschutes, Douglas, Grant, Jackson, Josephine, Lane, Linn, Malheur, Multnomah, Polk, Wasco, and Washington. These sixteen counties account for more than three-fifths of the total value of Oregon's mineral production.

Sand and gravel, stone, cement, and nickel ore are the State's principal mineral products, and of these stone production is growing fastest. All counties except Jefferson supply sand and gravel. Stone quarries are active throughout the State, with Lane and Baker counties providing the bulk of production. Cement manufacture is a major mineral industry in Baker, Clackamas, and Jackson counties, and nickel production is centered in Douglas County.

Metals

Even though nonmetallics comprise the bulk of Oregon's mineral output, the State also produces several important metals. In addition to gold from Josephine, Grant, and Baker counties, Oregon produces aluminum, copper, lead, mercury, nickel, silver, steel, uranium oxide and zinc. The State is a source of relatively small but significant quantities of such high-temperature materials as columbium-zirconium and titanium alloys, and high-purity tungsten, vanadium, and zirconium, all of which have essential uses in jet aircraft, missiles, and atomic-energy applications.

A large aluminum reduction plant operates at The Dalles in Wasco County, and new installations are planned at Wauna, in Clatsop County, and near Portland.

Jackson and Coos counties are the State's largest suppliers of copper, although some ore is mined in Lane, Douglas, and Baker counties.

Lead comes from Grant and Lane counties; Malheur and Harney counties are Oregon's leading mercury producers. Douglas County is the source of virtually all the nickel produced in the State; Grant, Lane, Coos, and Baker counties mine silver while Lake and Lane are the principal centers of uranium and zinc production. Steel output is concentrated at Portland, in Multnomah County.

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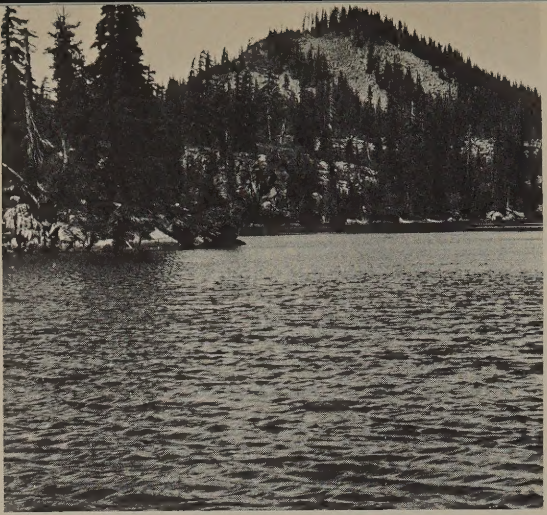
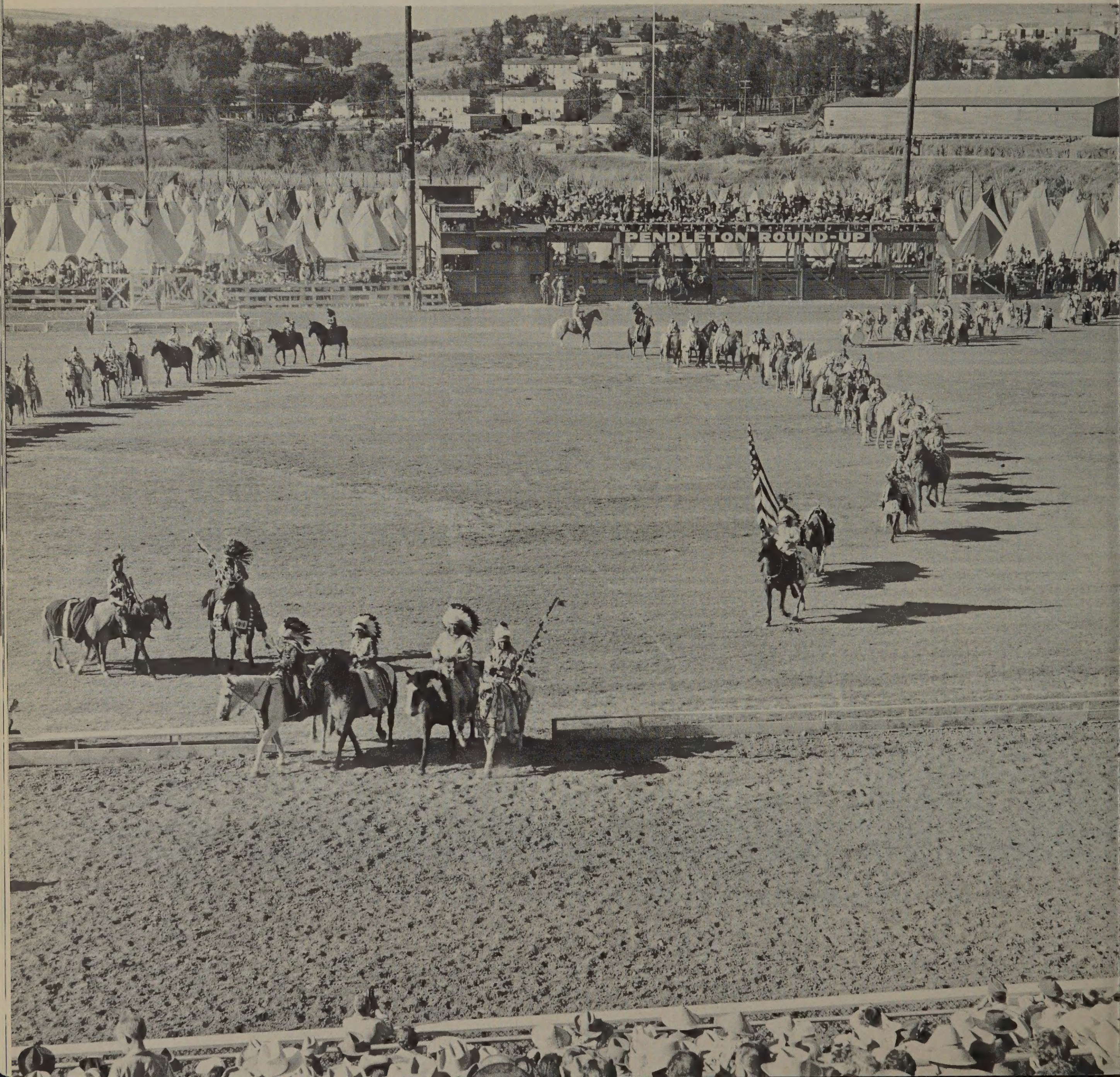
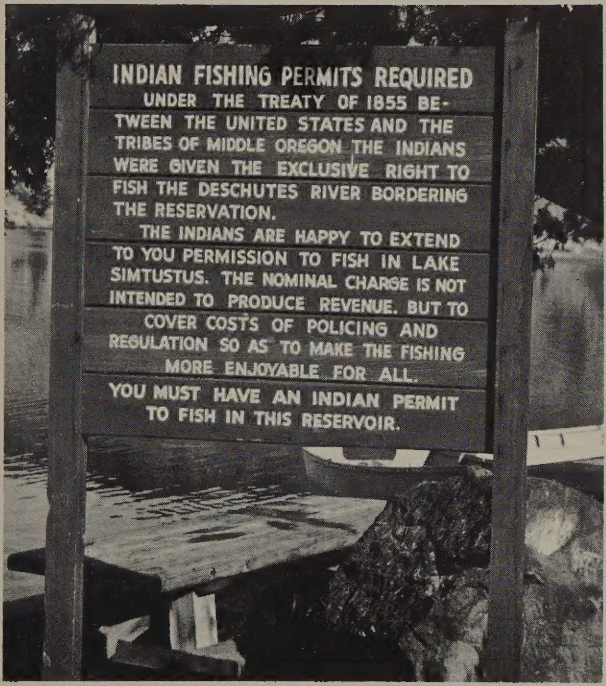


(Above) Hilda Lake is one of 25 lakes on the Warm Springs Indian Reservation in Jefferson and Wasco Counties.

(Below) Whole villages of Indians, with their colorful clothing and tradition, highlight the annual Pendleton Round-Up.



Indians and Their Resources

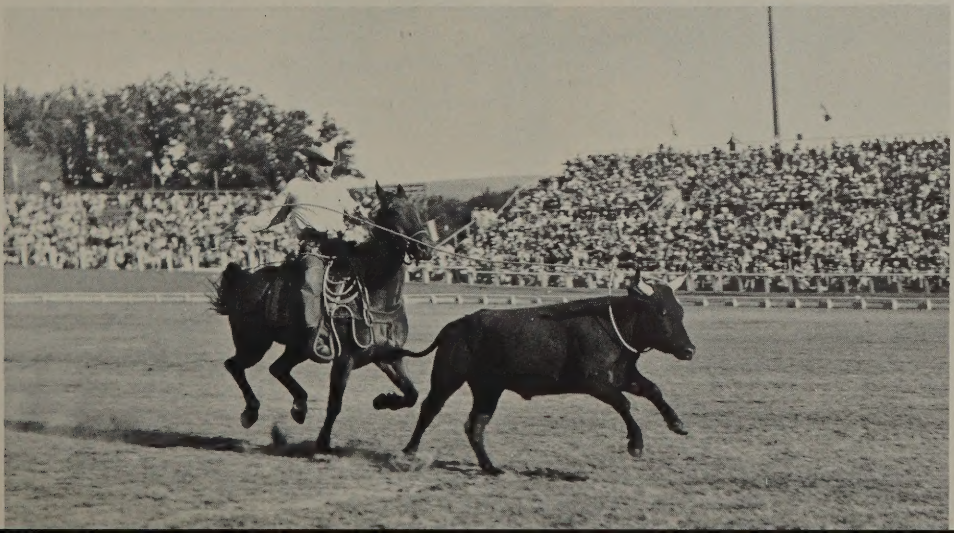

INDIAN FISHING PERMITS REQUIRED
UNDER THE TREATY OF 1855 BETWEEN THE UNITED STATES AND THE TRIBES OF MIDDLE OREGON THE INDIANS WERE GIVEN THE EXCLUSIVE RIGHT TO FISH THE DESCHUTES RIVER BORDERING THE RESERVATION.
THE INDIANS ARE HAPPY TO EXTEND TO YOU PERMISSION TO FISH IN LAKE SIMTUSTUS. THE NOMINAL CHARGE IS NOT INTENDED TO PRODUCE REVENUE, BUT TO COVER COSTS OF POLICING AND REGULATION SO AS TO MAKE THE FISHING MORE ENJOYABLE FOR ALL.
YOU MUST HAVE AN INDIAN PERMIT TO FISH IN THIS RESERVOIR.

(Above) Rivers and lakes on Indian lands offer recreation opportunities. (Below) Pendelton Round-Up is held in mid-September near Umatilla Reservation.

Oregon's Indians once populated the entire Oregon Territory from the coast to the uplands, living along the riverbanks, around the bays, and in the valleys. Their cultures varied widely. For the most part they were prosperous trading or nomadic groups rather than agriculturists. The river people in the extreme western valleys developed canoe travel in dugouts as a common means of transportation, whereas Indians in northeastern Oregon domesticated wild horses and became nomads. Within what is now the tri-State area of Oregon, Washington, and Idaho lived Indians of at least ten distinct linguistic families: Kalapooian, Yakonan, Shapwailutan, Athapascan, Chinookan, Kusan, Talilman, Shoshonean, Salishan and Hokan.

Contacts With White Man

The Indians of Oregon, like those of Washington and Idaho, were brought to the attention of Eastern America by the travels of Lewis and Clark. As contacts with incoming settlers increased, it became necessary for the Indians to add to their many languages a dialect which could be commonly understood. The merchant



Indians at the mouth of the Columbia, the Clatsop and Chinook, filled this need with a pidgin language based on Chinook, French and English, and eventually designated as the "Chinook jargon."

This peculiar-sounding but very useful jargon was widely used by all tribes, settlers, traders and missionaries so much that when the Indians were settled on the reservations, individuals who had not learned to speak it were obliged to do so if they wished to communicate with Indians of other tribes.

From the middle of the nineteenth century onward, the tribes of Oregon were rapidly dispossessed, placed on reservations, and reduced in numbers by disease, warfare, and partly through absorption into the outside community. The Indians fought bitterly to retain their independence and their lands, but by 1880 most of the hostiles had been moved to Idaho, and resistance was overcome.

Indians Today

Today the Indian population of Oregon is about 8,000, of whom about half live on reservation lands held in trust for them by the Bureau of Indian Affairs of the Department of the Interior. For the most part the Indians have taken their place among the citizens of the State, enjoying comparable political, social, economic, and educational standards. Oregon's Indian children attend public schools, and their parents participate widely in civic, political, and cultural affairs of the State.

Several Oregon tribal groups no longer have special relationships with the Federal Government. In 1954, several so-called "termination" bills passed Congress, affecting Indians of the coastal area and of the Klamath Reservation in the south-central part of the State. Each of these groups was treated according to its special needs.

The western Oregon Indians, including about 40 small bands, were well integrated in practically all respects into the general community along with their non-Indian neighbors. For several years they had urged passage of legislation that would cut their few remaining ties with the Federal Government.

The Klamath situation was one of social and economic progress more advanced than that of most Indian tribes in the country. Their total assets, including an unusually fine stand of timber, has been estimated in the neighborhood of from $60 million to $100 million.

For many years several Klamath Indian people had sought a means of selling their interests in the tribally owned property. Accordingly, the Klamath Act provided all members of this tribe the opportunity to elect to "withdraw" from the tribe and be paid for their proportionate interest in the property held in common ownership with all other tribal members. Seventy-eight percent of the Klamaths elected to do so and were paid for their interests in the property. The payment money was obtained from the sales of a portion of the tribal property.

Those who did not wish to withdraw remained under a tribal management program and are still considered to be tribal members. However, their portion of the tribal property was removed from Federal Government control and placed under a private trust organization.

Income From Trust Lands

The 700,000 acres of Indian trust lands in Oregon are important sources of income for the Indians. In a recent 5-year period the timber harvest from forest land brought an average of about a half-million dollars annually. Rangelands on the Warm Springs, Umatilla, and Burns Reservations comprise 258,000 acres of which 80 percent, or those at Warm Springs, are used free of charge by Indian livestock. The rangelands on the other reservations are leased for farming or permitted for grazing. The Warm Springs Reservation, with 25 lakes and more than 170 miles of fishing streams, has excellent potential for recreation uses. The fourth reservation in Oregon is the Klamath.

(Right) This lovely Indian maiden, dressed in traditional fashion for a pageant, is one of 8,000 Indians in Oregon.

(Above) Oregon's Mt. Bachelor winter sports area is one of the nation's finest. (Below) Camping is popular in the State's many national forests.

Parks and Recreation

As a natural playground Oregon delights both visitors and natives with its extremes. Mountains two miles high contrast with chasms a mile deep. National Forests, some of them as big as whole States, spread across the land and State forest lands cover more than 750,000 acres. The Pacific Crest Trail runs through some of these forests to Crater Lake, the deepest lake in the United States, formed in an extinct volcano. Ski tournaments are held in the summer and golf tournaments in the winter; snow-covered Mount Hood can be seen from Portland, where roses bloom most of the year.

Raw wilderness is perhaps one of the most arresting features of the State. The Hell's Canyon passage of the Snake River is one of

Information tables listing major Federal, State, and local recreation areas in Oregon and a location map appear at the end of this chapter. The acreage, type of visitor use, and outdoor activities available at the various parks, forests, and recreation sites can be found by reading across the table.

Shore Acres State Park, on the coast near North Bend, is one of the State's outstanding recreation areas.

the great American wilderness regions. For those willing to exchange flat pavement for terrain that virtually stands on end, a trip through the Snake River Gorge is an unforgettable experience.

Oregon is one of the few places in the Nation where one can enjoy water in both its liquid and ice forms in the same season. Visitors ski on water in the morning and down a snow slope in the same afternoon. Tobogganing is among the most popular winter sports. Water sports such as swimming, sailing, shell racing, outboarding, hydroplaning, and fishing can be enjoyed. There are boat races down white-water rivers and other competitive events the year round. Anglers compete for trout, steelhead, salmon, bass, crappie, and perch in brooks, rivers, lakes, and the Pacific Ocean.

National Parks and Historic Sites

The National Park Service administers three areas in Oregon and has designated McLoughlin House at Oregon City as a National Historic Site. It has also designated two other sites, Fort Astoria and Fort Rock Cave, as Registered National Historic Landmarks possessing "exceptional value" in commemorating the history of the United States.

Crater Lake National Park, Oregon's only National Park, is open for most activity from mid-June to mid-September and for winter sports from mid-September to mid-June. Snow covers the park for nearly eight months of the year.

Crater Lake was formed when the cone of a great volcano collapsed. The lake is 6 miles wide and 1,932 feet deep, and the caldera is surrounded by cliffs nearly 2,000 feet high and by hemlock and fir forests. From earliest times Crater Lake has awed visitors with its beauty.

Rim Drive, encircling the caldera, presents numerous observation points along its 35-mile length. The Park's other attractions include The Pinnacles, needle-like spires of pumice and other volcanic rock; lodge-pole pine forests, the Pumice Desert, and Wizard Island, a volcano within a volcano in Crater Lake itself. Launch trips on the lake and hiking along well laid-out trails are conducted by park naturalists. Mountains around the rim of the lake offer breathtaking views for the climber.

Paved State highways connect with the park road system at all entrances: West Entrance—State Route 62, through Medford with U.S. 99, 199 and 101; South Entrance—State 62 with U.S. 97; North Entrance—State 230 with U.S. 97.

Fort Clatsop National Memorial, east of Astoria, is the site of Lewis and Clark's winter camp of 1805–6 during their historic exploration. The fort, originally constructed by the expedition, was named in honor of the friendly Clatsop Indians. A replica faithfully following the dimensions of Captain Clark's drawing of the floor plan was built in 1955 for the Lewis and Clark Sesquicentennial. U.S. 101 passes north of the site.

Oregon Caves National Monument, in the southwestern corner of the State, contains four different floors or levels. Among the most striking sights in this marble cave are the exquisite miniatures of waterfalls created in stone by the percolating waters, and the stalactites and stalagmites that join to form columns.

Oregon Caves may be reached by Oregon 46, 20 miles from Cave Junction on U.S. 199.

McLoughlin House National Historic Site in Oregon City is one of the few remaining pioneer dwellings of the Pacific Northwest. This house was the home of Dr. John McLoughlin, Chief Factor of the British Hudson's Bay Company. Dr. McLoughlin whose word was law in Oregon until 1841, has been called "the Father of Oregon." McLoughlin House National Historic Site is not administered by the Federal Government, but by the McLoughlin Memorial Association and the Municipality of Oregon City.

Fort Astoria Registered National Historic Landmark is maintained by the City of Astoria. Founded in 1811 by the Pacific Fur Company, a partner of John Jacob Astor's American Fur Company, the fort represented an important American claim to Oregon. Although most of the site, located in Astoria, has been covered by modern buildings, a small section of it remains untouched at the corner of 15th and Exchange Streets.

Fort Rock Cave Registered National Historic Landmark, midway between Bend and Lakeview, yielded the famous Fort Rock sandals, the oldest dated artifacts in the New World.

Indian Reservations

Two of Oregon's three Indian reservations are in or near major recreational areas. Umatilla Reservation, in the Blue Mountains, is a gateway to water-based recreation on McNary Reservoir.

Rugged and beautiful wilderness attracts horsemen and hikers to the high Wallowa Mountains, overlooking Wallowa Lake, in northeastern Oregon.

Fish and hunting are available on and near the reservation. The annual Pendleton Round-Up and the Oregon Trail Monument at LaGrande are nearby attractions. Warm Springs Reservation, near Madras, offers fishing to the public. Indians have a public resort at Kahneeta Hot Springs. The reservations holds a Root Festival in April, Huckleberry Festival in August, and a rodeo on Labor Day.

Recreation on Public Land

The Oregon and California Grant Lands, more commonly called the O&C forest, cover over 2 million acres and stretch north and south from the California to the Washington borders and east and west from the Cascade Mountains to the Pacific Ocean. They are administered by the Department of the Interior's Bureau of Land Management.

The O&C forest offers many outstanding public recreation opportunities including fishing, hunting, camping, hiking, swimming, boating, and picnicking. One of the biggest attractions in the forest is the Rogue River Recreation Area, famous for its Gorge, salmon and steelhead fishing, white-water boat trips, and a 26-mile hiking trail along the river with convenient campsites. Facilities at over 50 public recreation sites in the O&C forest include picnic tables, fireplaces, sanitary installations, water development, campsites, trails, and parking areas. Some of the sites have boat ramps and swimming facilities. Several more recreation sites are under construction. Maps and detailed information on each of these sites is available from the Bureau of Land Management State Office at 710 N. E. Holladay, Portland.

There are over 13 million acres of public domain lands, administered by the Bureau of Land Management in Oregon. Most of the areas are east of the Cascade Mountains. These lands include forest, ranges, deserts, mountains, and wild canyon country. They are open to the public for recreational uses and opportunities include hunting, fishing, rockhounding, camping, hiking, and horseback riding.

Boating enthusiasts enjoy the facilities provided at many reservoirs. Sailboat racing is a favorite sport at Howard Prairie Lake in the Rogue River Basin.

National Forests

Oregon has 14 National Forests which offer all the diverse activities one may find in the Pacific Northwest. There are campsites for those who like to "rough it," and facilities for those who prefer the comforts of home. Hunting and fishing are permitted under the regulations of the State Fish and Game Department.

These forests plus the portion of Klamath National Forest lying within Oregon's boundaries are administered by the Forest Service, U.S. Department of Agriculture. Included in the National Forests are 656 camping and picnic areas; 19 winter sports areas; 10 wilderness, wild and primitive areas; the Oregon Skyline Trail portion of the the Pacific Crest Trail system, and the lower part of the Rogue River Trail. Skiing and saddle and pack trips are popular activities at most of the forests.

The following list of Oregon's National Forests gives a brief description of their main attractions:

Deschutes has headquarters at Bend in the Southern Cascade Range. Features include snow-clad peaks, lava caves, over 300 lakes, Three Sisters Wilderness area, historic Willamette Military Road, Mount Washington, Mount Jefferson, and Diamond Peak Wild Areas, scenic Century Drive, and sections of Oregon Skyline Trail.

Fremont, near Lakeview, includes Indian paintings and writings, protected antelope herds, the Oregon Desert, the second largest vertical geologic fault in the world, Gearheart Mountain Wild Area, and one ski area.

Malheur, with headquarters in John Day, includes extensive stands of ponderosa pine and interesting fossil beds of prehistoric plants and animals, the Strawberry Mountain Wild Area, an archers' hunting reserve, two ski areas, and the cabin of the poet-naturalist Joaquin Miller.

Mt. Hood, with headquarters at Portland, includes Mount Hood, Multnomah Falls, glaciers, lakes, hot springs, alpine meadows, Mount Hood and Mount Jefferson Wild Areas, many ski areas, scenic drives, Oregon Trail Route, and the Oregon Skyline Trail.

Ochoco, with headquarters at Prineville, has parklike ponderosa pine forests, beaver colonies, two frontier-day Army posts, scenic drives, and Stein's Pillar.

Rogue River, near Medford, contains beautiful Rogue River, lakes and fishing streams, extensive sugar pine and Douglas fir forests, Mountain Lake Wild Area, historic Table Rock, scenic drives, two ski areas, and the Oregon Skyline Trail. Rainbow and steelhead trout fishing, deer and migratory bird hunting, and saddle and pack trips are among the activities.

Siskiyou (partly in California) with headquarters in Grants Pass, offers sights of the Oregon coast, scenic drives, salmon fishing, early-day gold camps, rare tree species, Kalmiopsis Wild Area, and profuse growth of wild lilac, rhododendron, azaleas and pitcher plants. Bear and cougar hunting, boat trips on the Rogue River, and saddle and pack trips are among the activities.

Siuslaw has headquarters in Corvallis. Heavy stands of Sitka spruce, western hemlock, cedar, and Douglas fir, Pacific Ocean shoreline, 34 miles of public beach, sand dunes, and scenic drives are among the attractions of this Forest. Visitors may fish in ocean, lake, or stream, dig clams or scuba dive.

Umatilla (partly in Washington) with headquarters in Pendleton, includes a scenic skyline drive, spectacular views of Touchet and Wenaha River Canyons, extensive stands of ponderosa pine, Oregon Trail Route, and hot sulfur springs.

Umpqua, near Roseburg, includes spectacular waterfalls, unique stands of incense-cedar, and scenic drives, including the Oregon Skyline Trail.

Wallowa-Whitman (two National Forests) have their headquarters in Baker. These two forests offer snowcapped peaks, lakes, glaciers, alpine meadows and rare wild flowers, spectacular views, scenic drives and the Eagle Cap Wilderness area.

Willamette, with headquarters at Eugene, is the most heavily timbered forest in the United States. Lakes and waterfalls, hot springs, lava beds, historic Willamette Military Road, Mount Jefferson, Mount Washington and Diamond Peak Wild Areas, Oregon Skyline Trail, scenic drives, and two ski areas are found at this Forest.

Winema, near Klamath Falls, consists of lands from three National Forests and the former Klamath Indian Reservation.

Other Recreation Resources

Various kinds of recreation are available at all twelve of the National Wildlife Refuges administered by the Fish and Wildlife Service. In addition to birdwatching, hiking, and photography at all the refuges, hunting is permitted at Hart Mountain, Lower Klamath, McKay, Upper Klamath, and Willamette. Fishing is permitted at Cold Springs, Malheur, McKay, and Willamette. Camping and picnicking also are offered at some of the refuges.

Thousands of people visit reservoirs on Department of the Interior's Bureau of Reclamation projects. There are 18 Bureau of Reclamation recreation areas in Oregon, five of which are administered by the Bureau of Reclamation—Thief Valley Reservoir, Savage Rapids Reservoir, Gerber Reservoir, Warm Springs Reservoir, and Agency Valley—and the others are administered by various Federal, State and local agencies. Most of these areas include facilities

A 36-pound chinook salmon is this angler's surfcasting prize near where the Rogue River enters the Pacific Ocean.

for picnicking, camping, swimming, boating, fishing and hunting. They encompass a total of more than 50,000 acres of water and nearly 20,000 acres of land.

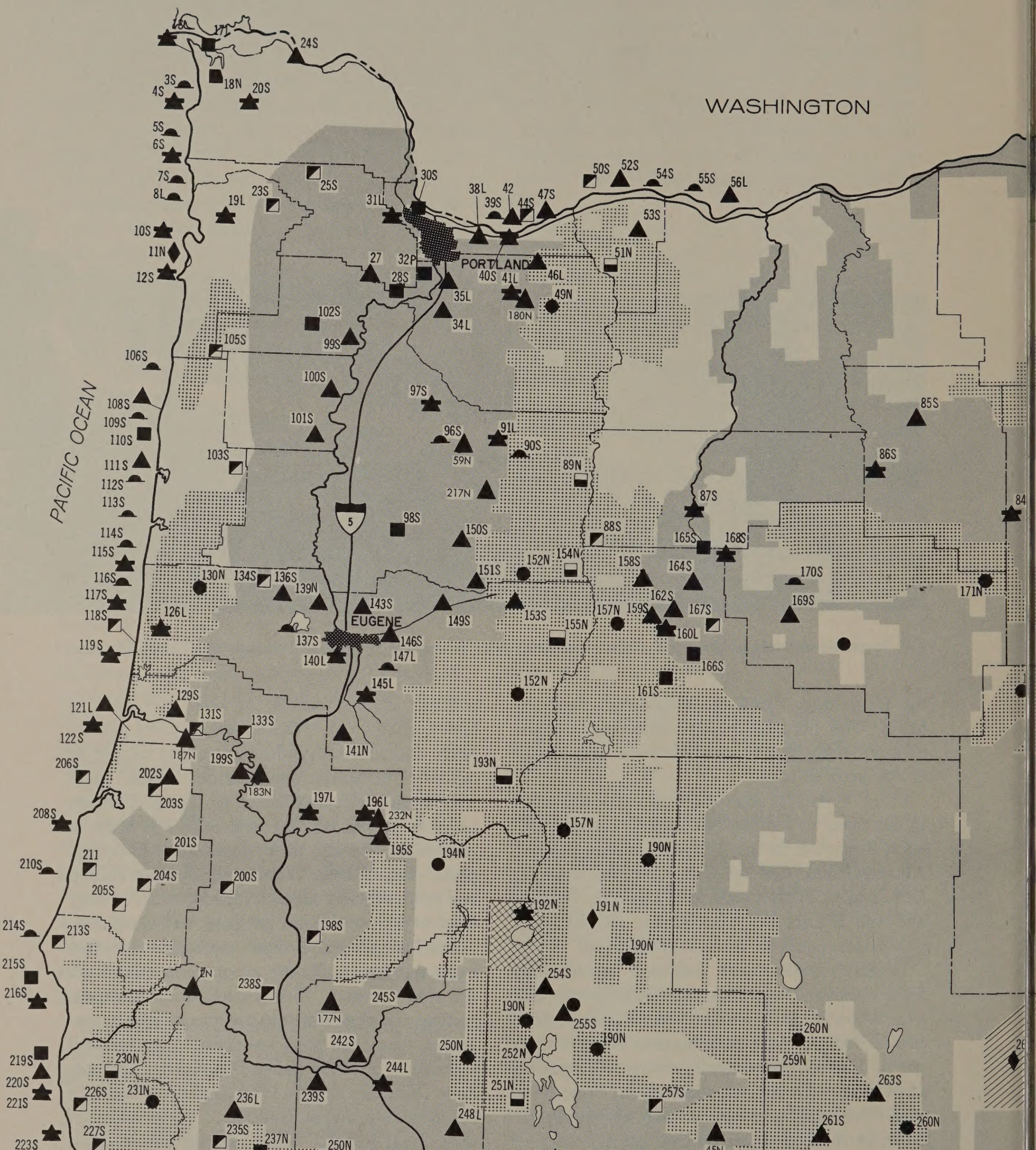
Other Federally controlled recreational areas in the State include seven Army Corps of Engineers Reservoirs in the Willamette River Basin—Amazon Creek, Cottage Grove, Detroit, Dorena, Fern Ridge, Hills Creek and Lookout Point—and the Bonneville, The Dalles, and McNary navigation pools on the Columbia River.

Locally administered facilities include 188 State Parks and waysides, one State Forest, and over 80 public fishing and 17 game management areas. County park development is rapid with the number of parks, already over 100, steadily increasing. Forest industries in the State have also established many picnic and camping spots. Most of these areas are on tree farms.

Privately owned recreation facilities are of major importance in Oregon. These vary from resident summer camps for boys and girls to fine hunting areas. The State's crop and pasture lands contribute significantly to the supply of outdoor recreation opportunities; many vacation farms accept tourists as guests. Others lease or supply hunting opportunities, often in combination with cabin facilities. Camping, picnicking, fishing, hiking, horseback riding, and guide services are provided by some. Many lease or sell scenic sites for home and camp lots.

Lists of all the privately operated recreation opportunities in Oregon are not available from any single source. Travel bureaus and agencies, commercial organizations such as gasoline companies, motel and hotel associations, airlines and railroads, local Chambers of Commerce, and outdoor clubs can supply information on many of the privately owned facilities. Local inquiries will reveal others. Some information is available from the Travel Information Department, Oregon State Highway Commission, Salem.

Oregon Outdoor Recreation Guide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CALIFORNIA
PORTLAND
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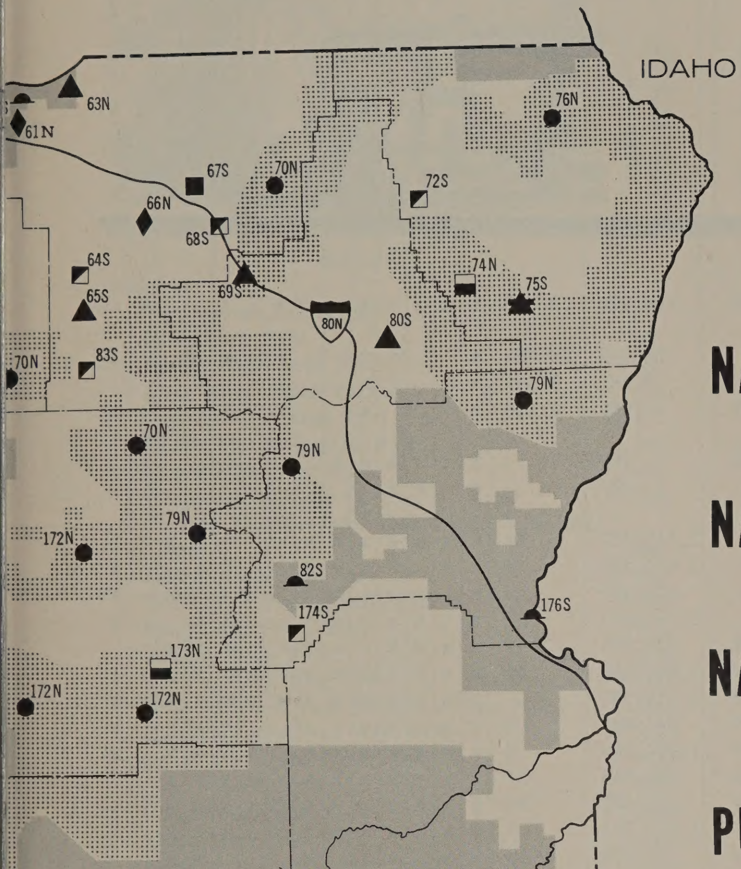
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186N
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NEVADA

Park ★

Recreation Area , Etc. ▲

Monument ■

Nature Preserve ◩

Wilderness ⬓

Beach ◓

Wildlife Area ◆

Forest ●

NATIONAL PARK ▩

NATIONAL FOREST ▦

NATIONAL WILDLIFE REFUGE ▨

PUBLIC LANDS
ADMINISTERED BY THE BUREAU OF LAND MANAGEMENT ▒

HOW TO USE THIS GUIDE

Symbols on the map below represent major areas in Oregon offering recreation. Areas described in the recreation listings on the following pages may be located on this map by matching the map numbers on the listings with the numbers beside symbols on this map. Letters in the key number refer to Federal (N), State (S), local (L), and quasi-public and private (P). Listings show the land and water acreage of each area, the suggested type of use, and the activities available. Only major interstate highways and major cities are shown on the map. A more detailed road map can provide exact locations for those areas you may wish to visit.

	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (1)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
FEDERAL																	
Park: Crater Lake National Park	192N	160, 290	12, 800	x	x	x	x	x	x	x	x	x	x	..	x	x	x
Recreation areas:																	
McNary Reservoir	63N	38, 043	38, 000	x	..	..	x	x	..	..	x	x	x	..	..	..	..
Fern Ridge Reservoir	139N	9, 385	9, 360	x	..	..	..	x	..	..	x	x	x	x	..	..	..
Cottage Grove Reservoir	141N	1, 580	1, 140	x	..	..	..	x	..	..	x	x	x	..	..	..	..
Monuments:																	
Scientific: Oregon Caves National Monument	237N	480	....	x	x	x	x	x	x	..	..	..	..	..	..	..	..
Historic: Fort Clatsop National Memorial	18N	125	....	x	..	x	x	..	..	..	..	..	..	..	..	..	..
Forests:																	
Mount Hood National Forest	49N	1, 115, 327	M	x	x	x	x	x	x	x	x	..	x	x	x	x	x
Umatilla National Forest (Oregon portion)	70N	1, 075, 959	S	x	x	x	x	x	x	x	..	..	x	x	..	..	x
Wallowa National Forest	76N	979, 279	S	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Whitman National Forest	79N	1, 511, 613	M	x	x	x	x	x	x	x	..	..	x	x	..	..	x
Siuslaw National Forest	130N	622, 180	M	x	x	x	x	x	x	x	x	x	x	x	x	..	..
Willamette National Forest	152N	1, 665, 835	M	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Deschutes National Forest	157N	1, 659, 380	....	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ochoco National Forest	171N	845, 880	S	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Malheur National Forest	172N	1, 204, 834	S	x	x	x	x	x	x	x	..	..	x	x	x	..	x
Winema National Forest	190N	908, 963	M	x	x	..	x	x	x	x	x	x	x	x	x	..	..
Umpqua National Forest	194N	983, 982	M	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Siskiyou National Forest	231N	1, 047, 101	S	x	x	x	x	x	x	x	x	..	x	x	x	..	x
Klamath National Forest (Oregon portion)	243N	29, 795	S	x	x	..	x	..	..	x	..	..	..	x	..	..	..
Rogue River National Forest	250N	837, 235	M	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Fremont National Forest	260N	1, 254, 608	M	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Wilderness:																	
Mount Hood Wild Area	51N	14, 160	S	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Eagle Cap Wilderness Area	74N	216, 250	M	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Mount Jefferson Primitive Area	89N	86, 700	M	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Mount Washington Wild Area	154N	46, 655	M	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Three Sisters Wilderness Area	155N	196, 708	M	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Strawberry Mountain Wild Area	173N	33, 004	S	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Diamond Peak Wild Area	193N	35, 440	M	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Kalmiopsis Wild Area	230N	78, 530	S	x	x	x	..	..	x	x	..	..	x	x	x	..	x
Mountain Lakes Wild Area	251N	23, 071	M	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Gearhart Mounatin Wild Area	259N	18, 709	S	x	x	x	..	..	x	x	..	..	x	x	..	..	x
Wildlife areas:																	
Cape Meares National Wildlife Refuge	11N	139	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Three Arch Rocks National Wildlife Refuge	11N	17	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Cold Springs National Wildlife Refuge	61N	3, 117	1, 550	x	..	..	..	x	..	..	..	..	x	..	x	..	..
McKay Creek National Wildlife Refuge	66N	1, 837	1, 286	x	..	..	..	..	..	..	..	..	x	..	x	..	..
Malheur National Wildlife Refuge	186N	184, 872	56, 000	x	..	..	..	x	..	x	..	..	x	x	x	..	..
Klamath Forest National Wildlife Refuge	191N	15, 226	....	x	..	..	..	..	..	..	..	..	..	..	x	..	..
Oregon Islands National Wildlife Refuge	225N	21	....	..	..	..	..	..	..	..	..	..	..	..	x	..	..
Upper Klamath National Wildlife Refuge	252N	15, 226	68, 200	x	..	..	..	..	..	..	..	..	x	x	x	..	..
Lower Klamath National Wildlife Refuge (Oregon portion)	256N	1, 340	....	x	..	..	..	..	..	x	..	..	..	x	x	..	..
Hart Mountain National Antelope Refuge	265N	240, 664	....	x	..	..	..	..	..	x		..	..	x	x	..	..
Charles Sheldon Antelope Range (Oregon portion)	266N	628	....	x	..	..	..	..	..	x		..	..	x	x	..	..

See footnotes at end of table.

	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
STATE																	
Parks:																	
Fort Stevens State Park	1S	793	70	x	x	x	x	x	x	x	x	x	x	. .	. .	. .	. .
Ecola State Park	4S	1, 107	....	x	x	. .	x	x	x	. .	. .	x	x	. .	x	. .	. .
Oswald West State Park	6S	2, 501	....	x	x	. .	x	x	x	x	. .	x	x	. .	. .	. .	. .
Cape Meares State Park	10S	139	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	x	. .	. .
Cape Lookout State Park	12S	1, 451	....	x	x	x	x	x	x	x	. .	x	x	. .	. .	. .	. .
Saddle Mountain State Park	20S	3, 054	....	x	. .	. .	x	x	x	x	. .	. .	. .	. .	. .	. .	. .
Crown Point State Park	40S	265	....	x	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Willowa Lake State Park	75S	166	1, 600	x	x	x	. .	x	x	x	x	x	x	. .	. .	. .	. .
Thomas Condon-John Day Fossil Beds State Park	84S	3, 481	....	x	x	x	x	x	x	x	. .	. .	. .	. .	x	. .	. .
Painted Hills State Park	86S	13	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	x	. .	. .
The Cove Palisades State Park	87S	4, 533	....	x	x	. .	. .	x	x	x	. .	. .	x	. .	. .	. .	. .
Silver Falls State Park	97S	8, 259	....	x	x	. .	. .	x	x	x	. .	x	x	. .	. .	. .	. .
Neptune State Park	115S	331	....	x	. .	. .	x	x	. .	x	. .	x	x	. .	. .	. .	. .
Devil's Elbow State Park	117S	97	....	x	. .	. .	x	x	. .	. .	. .	x	x	. .	x	. .	. .
Jessie M. Honeyman Memorial State Park	119S	522	1, 123	x	x	x	x	x	x	x	x	x	x	. .	x	. .	. .
Umpqua Lighthouse State Park	122S	2, 747	S	x	x	x	x	x	x	x	. .	x	x	. .	x	. .	. .
Smith Rock State Park	168S	304	....	x	. .	. .	. .	x	x	x	. .	x	x	. .	. .	. .	. .
Sunset Bay State Park	208S	88	....	x	x	. .	. .	x	. .	x	x	x	x	. .	. .	. .	. .
Cape Arago State Park	208S	134	....	x	. .	. .	. .	x	. .	. .	. .	x	x	. .	. .	. .	. .
Shore Acres State Park	208S	683	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	x	. .	. .
Humbug Mountain State Park	216S	1, 821	....	x	x	. .	x	x	x	x	. .	x	x	. .	. .	. .	. .
Cape Sebastian State Park	221S	1, 069	....	x	. .	. .	x	x	x	. .	. .	. .	. .	. .	. .	. .	. .
Samuel A. Boardman Wayside	223S	1, 473	....	x	x	. .	x	x	x	x	. .	x	x	. .	x	. .	. .
Recreation areas:																	
Bradley Wayside	24S	18	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Bald Peak State Park	27S	26	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Dabney State Park	42S	79	....	x	. .	. .	. .	x	. .	x	. .	x	x	. .	. .	. .	. .
George W. Joseph State Park	42S	150	....	x	. .	. .	x	. .	x	. .	. .	. .	. .	. .	. .	. .	. .
Guy W. Talbot State Park	42S	241	....	x	. .	. .	x	x	x	. .	. .	. .	. .	. .	. .	. .	. .
Benson State Park	47S	84	S	x	. .	. .	x	x	. .	. .	x	x	x	. .	. .	. .	. .
John B. Yeon State Park	47S	284	....	x	. .	. .	x	x	x	. .	. .	. .	. .	. .	. .	. .	. .
McLoughlin State Park	47S	82	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Ainsworth State Park	47S	46	....	x	. .	. .	x	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Lindsey Creek State Park	52S	129	....	x	. .	. .	x	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Seneca Fouts Memorial State Park	52S	199	....	x	. .	. .	. .	x	x	. .	. .	. .	. .	. .	. .	. .	. .
Starvation Creek State Park	52S	153	....	x	. .	. .	x	x	x	. .	. .	. .	. .	. .	. .	. .	. .
Viento State Park	52S	244	....	x	. .	. .	x	x	. .	x	. .	. .	. .	. .	. .	. .	. .
Wygant State Park	52S	691	....	x	. .	. .	x	x	x	. .	. .	. .	. .	. .	. .	. .	. .
Zibe Dimmick State Park	53S	23	....	x	. .	. .	. .	x	. .	. .	. .	. .	x	. .	. .	. .	. .
Battle Mountain State Park	65S	136	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Hilgard Junction State Park	69S	6	....	x	. .	. .	x	x	. .	x	. .	. .	x	. .	. .	. .	. .
Red Bridge State Park	69S	35	....	x	. .	. .	. .	x	. .	. .	. .	. .	x	. .	. .	. .	. .
Catherine Creek State Park	80S	160	....	x	. .	. .	. .	x	. .	x	. .	. .	x	. .	. .	. .	. .
Shelton Wayside	85S	180	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Maude Williamson State Park	99S	20	....	x	. .	. .	. .	x	. .	x	. .	. .	. .	. .	. .	. .	. .
Holman Wayside	100S	9	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .
Sarah Helmick State Park	101S	31	....	x	. .	. .	. .	x	. .	x	. .	x	x	. .	. .	. .	. .
Boiler Bay Wayside	108S	32	....	x	. .	. .	. .	x	. .	. .	. .	. .	. .	. .	. .	. .	. .

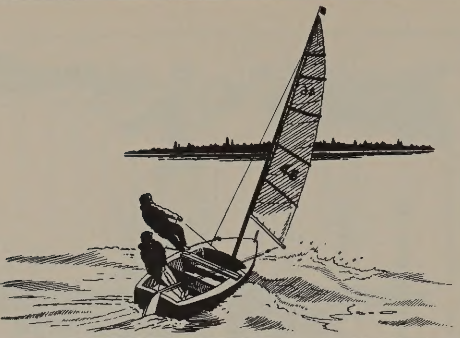
See footnotes at end of table.

		Acreage		Type of use				Activities									
	Number on map	Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
STATE—Continued																	
Recreation areas—Continued																	
Yaquina Bay State Park	111S	32		x				x									
Umpqua Wayside	129S	31		x				x			x						
Alderwood Wayside	136S	80		x				x									
Armitage State Park	143S	41		x				x		x	x	x	x				
Hendricks Bridge Wayside	146S	12		x				x				x	x				
Ben and Kay Dorris State Park	149S	79		x				x			x	x	x				
Cascadia State Park	150S	322		x			x	x		x		x	x				
Howard J. Morton Memorial State Park	151S	24		x				x					x				
Jennie B. Harris Wayside	153S	4		x				x			x		x				
Sisters State Park	158S	41		x			x	x									
Robert W. Sawyer State Park	159S	41		x			x	x					x				
Tumalo State Park	162S	117		x				x		x		x	x				
Cline Falls State Park	164S	9		x				x					x				
Prineville Reservoir Recreation Area	169S	300	3, 020	x				x		x	x	x	x				
Susan Creek State Park	195S	148		x				x		x		x	x				
Hutchinson Wayside	199S	6		x				x					x				
Golden and Silver Falls State Park	202S	157		x				x	x								
Buena Vista Ocean Wayside	220S	58		x				x									
Ben Hur Lampman Wayside	239S	23		x			x	x			x		x				
Rogue River Bridge Area	239S	169		x				x				x	x				
Tou Velle State Park	242S	35		x				x			x	x	x				
Casey State Park	245S	80		x			x	x				x	x				
Laurelhurst State Park	245S	272		x				x				x	x				
McLeod Wayside	245S	80		x			x	x				x	x				
Jackson F. Kimball State Park	254S	19		x				x					x				
Collier Memorial State Park	255S	199		x			x	x									
Booth Wayside	261S	311		x			x	x									
Chandler Wayside	263S	57		x			x	x									
Monuments:																	
Scientific:																	
Sodaville Springs State Park	98S	1		x													
Erratic Rock Wayside	102S	4		x			x								x		
Devil's Punch Bowl State Park	110S	5		x			x	x									
Lava River Caves State Park	161S	23		x			x	x							x		
Peter Skene Ogden Scenic Wayside	165S	98		x			x	x									
Pilot Butte State Park	166S	101		x			x	x									
Historic:																	
Champoeg State Park	28S	159		x				x		x					x		
Willamette Stone State Park	30S	2		x													
Emigrant Springs State Park	67S	14		x			x	x	x	x							
Battle Rock Wayside	215S	3		x			x					x					
Geisel Monument Wayside	219S	4		x			x	x									
Nature preserves:																	
Wilson River Highway Forest Wayside	23S	772		x			x	x					x				
Sunset Highway Forest Wayside	25S	1, 100		x			x	x									
Shepperd's Dell State Park	44S	105		x			x	x	x								
Lang State Park	50S	162		x			x	x									
Battle Mountain Forest Wayside	64S	284		x				x									
Blue Mountain Forest Wayside	68S	2, 152		x				x									
Wallowa Lake Highway Forest Wayside	72S	314		x				x									

See footnotes at end of table.

	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (7)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
Nature preserves—Continued																	
Ukiah-Dale Forest Wayside	83S	2, 987	....	x				x		x							
Elliott R. Corbett II Memorial State Park	88S	63	S	x				x	x								
Ellmaker State Park	103S	80	....	x				x									
H. B. Van Duzer Forest Corridor Wayside	105S	1, 507	....	x				x									
Joaquin Miller Forest Wayside	118S	112	....	x											x		
Darlingtonia Wayside	118S	17	....	x											x		
Umpqua Myrtle Preserve	131S	5	....	x											x		
Elk Creek Tunnel Forest Wayside	133S	200	....	x				x									
Blachly Mountain Forest Wayside	134S	80	....	x				x									
Redmond-Bend Juniper Wayside	167S	635	....	x											x		
Unity Forest Wayside	174S	85	....	x				x									
Canyon Creek Forest Wayside	198S	80	....	x				x									
Camas Mountain Wayside	200S	160	....	x				x									
Maria C. Jackson State Park	201S	42	....	x											x		
Millicoma-Myrtle Grove State Park	203S	15	....	x				x							x		
Norway Myrtle Preserve	204S	57	....	x											x		
Coquille-Myrtle Grove State Park	205S	7	....	x				x							x		
Simpson Wayside	206S	24	....	x				x									
Sweet Myrtle Preserve	211S	16	....	x											x		
Port Orford Cedar Forest Wayside	213S	34	....	x											x		
Carpenterville-Brookings Forest Wayside	226S	510	....	x				x									
Azalea State Park	227S	26	....	x				x							x		
Loeb State Park	227S	160	....	x				x							x		
Rough and Ready Wayside	235S	11	....	x				x							x		
Mackin Gulch Forest Wayside	238S	430	....	x				x									
Stage Coach Forest Wayside	238S	231	....	x				x									
Klamath Falls-Lakeview Wayside	257S	80	....	x				x									
Beaches:																	
Gearhart Ocean Wayside	3S	286	....	x				x				x					
Hug Point State Park	5S	1	....	x				x				x					
Nehalem Bay State Park	7S	820	....	x				x				x					
Lewis and Clark State Park	39S	56	....	x				x			x	x	x				
Rooster Rock State Park	39S	825	....	x			x	x			x	x	x				
Koberg Beach State Park	54S	88	20, 700	x				x			x	x	x				
Mayer State Park	55S	268	20, 700	x				x			x	x	x				
Hat Rock State Park	62S	369	38, 000	x				x			x	x	x				
Unity Lake State Park	82S	39	930	x				x			x	x	x				
Detroit Lake State Park	90S	45	3, 600	x	x			x		x	x	x	x				
North Santiam State Park	96S	74	....	x				x			x	x	x				
Devil's Lake State Park	106S	110	M	x				x		x	x	x	x				
Fogarty Creek State Park	106S	104	....	x				x				x					
Beverly Beach State Park	109S	69	....	x				x		x		x					
Rocky Creek Wayside	109S	58	....	x				x									
Lost Creek State Park	112S	78	....	x				x				x					
Ona Beach State Park	112S	138	....	x				x				x					
Seal Rock Wayside	112S	8	....	x				x				x					
South Newport State Park	112S	163	....	x				x				x					
Beachside State Park	113S	17	....	x				x		x		x					
Governor Patterson Memorial State Park	113S	9	....	x				x				x					
Lincoln County Ocean Wayside	113S	42	....	x				x				x					
Yachats State Park	114S	3	....	x				x				x	x				

See footnotes at end of table.



	Number on map	Acreage		Type of use				Activities									
		Total land and water within area	Water surface (1)	Day and weekend	Vacation	Out-of-State target	Tourist en route	Picnicking	Hiking and riding	Camping	Boating	Swimming	Fishing	Hunting	Nature study	Winter sports	Wilderness experience
STATE—Continued																	
Beaches –Continued																	
Yachats Ocean Road Wayside	114S	9		x				x				x					
Murial O. Ponsler Memorial Wayside	116S	2		x				x				x	x				
Fern Ridge State Park	137S	54	9, 360	x				x			x	x	x				
Ochoco Lake State Park	170S	10	1, 080	x				x		x	x	x	x				
Farewell Bend State Park	176S	65	15, 000	x			x	x		x	x	x	x				
Owyhee Lake State Park	178S	730	12, 742	x				x		x	x	x	x				
Bandon State Park	210S	88		x				x				x					
Bandon Ocean Wayside	210S	10		x				x				x					
Newburgh State Park	214S	1, 419		x				x		x		x					
Harris Beach State Park	224S	141		x				x		x		x					
MAJOR LOCAL																	
Parks:																	
Kilchis Park	19L	600		x				x		x			x				
Forest Park	31L	3, 366		x				x	x								
Eagle Fern Park	41L	175		x				x	x	x		x	x				
Niagara Park	91L	40		x				x				x	x				
Siuslaw Harbor Vista County Park	126L	15		x				x		x	x	x	x				
Spencer Butte Park	140L	280		x				x	x	x							
Baker Bay County Park	145L	47	1, 900	x				x			x	x	x				
Shevlin Park	160L	388		x				x		x			x				
Richard G. Baker Memorial Park	196L	10		x				x					x				
Whistler's Bend Park	197L	160		x				x	x			x	x				
Prescott Memorial Park	244L	1, 720		x				x	x								
Recreation areas:																	
Wagon Wheel Park	34L	15		x				x				x	x				
Clackamette Park	35L	25		x				x			x		x				
Blue Lake Park	38L	39	S	x				x			x	x	x				
Dodge Park	46L	26		x				x				x	x				
Celilo Park	56L	15	9, 400	x			x	x		x	x	x	x				
Winchester Bay Tidelands Park and Boat Basin	121L	90		x			x				x		x				
Selmac Lake	236L	320	160	x				x		x	x	x	x				
Howard Prairie Reservoir	248L	1, 980	2, 000	x	x			x		x	x	x	x			x	
Monument: Historic: Fort Astoria	17L	10		x													
Beaches:																	
Barview Wayside	8L	300		x			x	x		x		x	x				
North Shore County Recreation Area	147L	55	1, 025	x				x			x	x	x				
FEDERAL—PUBLIC LANDS (2)																	
Recreation areas:																	
Rock Creek	232N	80		x		x	x	x		x		x	x		x		
Elderberry Flat	177N	40		x				x		x		x	x		x		
North Fork of Eagle Creek	180N	40		x		x		x	x	x			x		x		
Tyee	183N	50		x				x	x	x			x		x		
Loon Lake	187N	50		x	x	x	x	x		x	x	x	x				
Yellowbottom	217N	40		x				x		x			x		x		
Topsy	246N	40		x				x		x			x		x		
Gerber Reservoir	45N	100	5, 000	x	x			x		x	x	x	x	x	x		
Fishermans Bend	59N	100		x				x		x			x		x		
Rogue River Recreation Area	2N	10, 000	400	x	x	x			x	x	x		x	x	x		x

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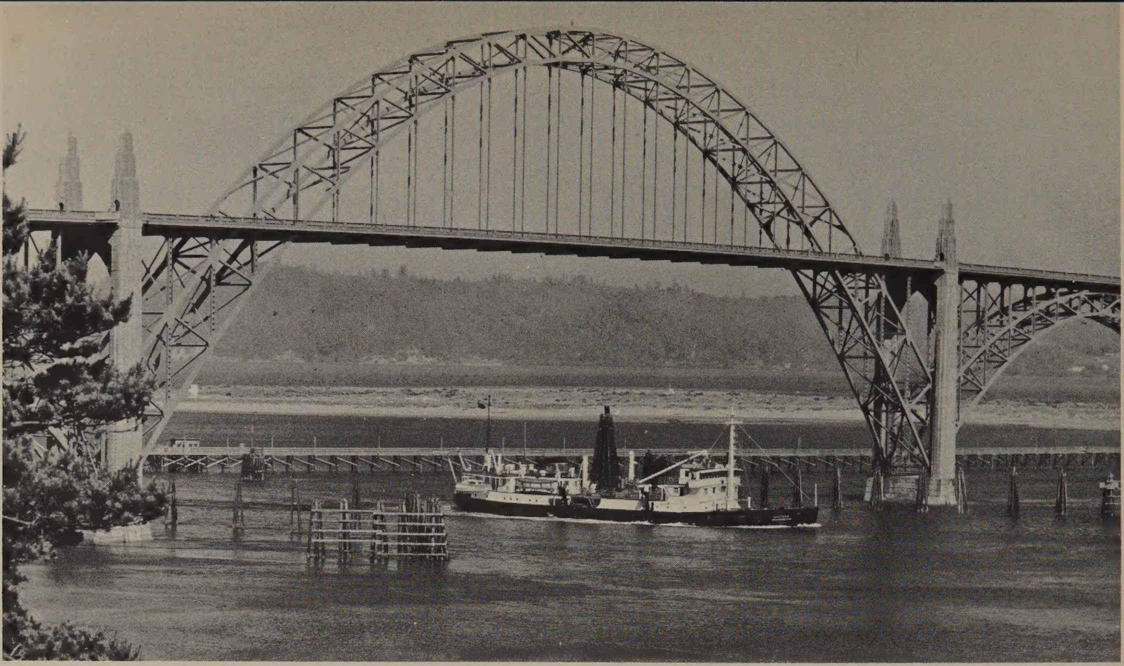
Footnotes:

(1) *Where water surface acreage not shown: "S" indicates water area under 500 acres; "M" indicates water area of 500 to 10,000 acres.*

(2) *The Department of the Interior's Bureau of Land Management has developed 53 recreation sites in Oregon on public lands administered by the Bureau of which the ten listed are the most significant.*

Programs of Federal Natural Resource Agencies

The wise use and protection of Oregon's rich natural resources have been the concern of the natural resource agencies of the Federal Government. The following pages describe some of these programs and interests. Full information can be obtained by contacting the offices noted in this programs section.



A U.S. Army Corps of Engineers' dredge moves out to sea to dump spoils material removed from Yaquina Bay Harbor.

United States Army Corps of Engineers

The United States Army Corps of Engineers, under assignment by Congress, is charged with public civil works programs to control, regulate, and improve river and harbor resources, to administer laws regarding the preservation of navigable water, and to plan, construct, and operate flood-control works.

In Oregon, the Corps has been active in navigation projects, power development projects, flood-control projects, emergency flood-control work, and in a continuing program of examinations and survey of water-resource conservation and development projects.

Among the most important projects are those in the Columbia River Basin, including stabilization of channels and flood control. Because of such projects, it is now possible to navigate the Columbia over 350 miles upstream. Other projects have saved over $250 million by flood control in the Columbia River Basin.

Major Navigation Projects

The Corps is continually improving and maintaining Oregon's waterways to provide safe and efficient access to coastal and inland ports. The Corps has completed about 25 navigation projects in Oregon. Projects such as Bonneville Dam, The Dalles Dam, and McNary Dam, are based on the multiple use of water resources in the interest of navigation as well as power, irrigation, recreation, and other purposes.

The Corps has provided channels, breakwaters, and related improvements in harbor projects. Some of these works are at Coos Bay, Depoe Bay, Tillamook Bay, and Yaquina Bay and Harbor. The 21-mile Multnomah Channel, completed in 1935, connects the Willamette River with the Columbia River and includes two ship channels. The Corps has constructed navigation channels from the mouth of the Columbia River to Portland (about 110 miles) and from the mouth of the Willamette River to Vancouver, where turning basins and numerous side channels to port facilities at cities along the river are provided. On the Umpqua River, largest river between San Francisco Bay and the Columbia, which flows into the Pacific about 180 miles south of the mouth of the Columbia River, navigation improvements include two jetties at the entrance, an entrance channel, river and side channels, and a turning basin.

Channel improvements through critical rapids on the Columbia River provide a waterway from the head of The Dalles-Celilo Canal to near

Wallula, Washington, a distance of 113 miles. McNary Lock and Dam provide slackwater development over the upper 36 miles of the project channel, The Dalles Lock and Dam have inundated the lower 15 miles of the channel, and the John Day project, now under construction, will inundate the remaining 77 miles of the channel. These navigation facilities will serve as a major connecting waterway between the Pacific Ocean and areas 350 miles inland.

A key feature on the Columbia River at Bonneville is the Bonneville Dam, about 145 miles above the mouth of the river. The spillway section, 1,090 feet long with 18 gates, is between Bradford Island and the Washington shore. The powerhouse section, housing ten generating units with a total installed capacity of 518,400 kilowatts as well as a single-lift ship lock, is between Bradford Island and the Oregon shore. Facilities for permitting migration of fish are provided. Power generated at Bonneville Dam is delivered to transmission lines of the Department of the Interior's Bonneville Power Administration for marketing.

The Dalles Dam is at the end of Bonneville pool, 192 miles above the mouth of the Columbia River and approximately 3 miles east of The Dalles. This multipurpose project provides a 25-mile slack-water pool for navigation, adds needed power-generating capacity to the Northwest Power Pool, reduces the pumping lift required for irrigation, and offers recreational possibilities for the public. The project consists of a navigation lock on the Washington shore, spillway, fish facilities, a powerhouse for 14 generating units, and nonoverflow dam sections.

McNary Lock and Dam, a multi-purpose project on the Columbia River 3 miles east of Umatilla, is 292 miles upstream from the mouth of the river and provides a slack-water pool extending 64 miles upstream. The project includes the dam, a navigation lock, hydroelectric power plant, spillway and facilities for passage of migratory fish. The navigation lock is one of the highest single-lift locks in the world. The McNary powerhouse has an installed generating capacity of 980,000 kilowatts in 14 units. The powerplant will generate over 6 billion kilowatt-hours of energy annually under normal conditions.

Flood-Control Projects

In Oregon, 30 flood-control projects have been constructed or rehabilitated with Federal funds. The improvements include construction of new levees, the raising and widening of existing levees, and similar measures.

Major reservoirs are in the Willamette Valley on the Middle Fork of the Willamette River, on Long Tom River, and on the Row River. Important flood-control projects include the Detroit Dam and Big Cliff Reregulating Dam, both with power generating facilities, on the North Santiam River southeast of Salem, and Lookout Point Dam and Dexter Reregulating Dam, both with power generating facilities, on the Middle Willamette River southeast of Eugene.

Numerous Projects Underway

The Corps has many important navigation, flood-control, and water conservation and development projects underway in many parts of Oregon. The multi-purpose John Day Lock and Dam on the Columbia River, 26 miles upstream from The Dalles, will consist of a navigation lock, spillway, a powerhouse of 10 units, non-overflow dam sections, and fish-passage facilities. The Green Peter project, including two dams and reservoirs, is a unit of the comprehensive plan for flood control and multiple-purpose development and use of the water resources of the Willamette River Basin. Other projects are underway on the John Day River, Umatilla River, and South Fork McKenzie River.

Surveys are underway for comprehensive water-resource development to include flood control, navigation improvement, recreation use, irrigation, and power in the Columbia and Willamette Basins. These basins are the subject of periodic Basin Review Reports to Congress.

Further information about U.S. Army Corps of Engineers' programs in Oregon may be obtained from the North Pacific Division Office, 210 Custom House, Portland, 97209. A Corps District Office is located at 628 Pittock Block, Portland, 07205.

Bonneville Power Administration

More than half of Oregon's electric energy consumption is met by the Bonneville Power Administration, the marketing agency for the United States Columbia River Power System. This energy is delivered to the ultimate consumer by both public and private distributors, except large industry which is served directly by BPA. Organized under the Department of the Interior, the BPA has its headquarters in Portland and a district office in Eugene.

Power Installations

Three great Columbia River dams at Bonneville, The Dalles, and McNary supply most of the power generated for the BPA in Oregon. Since the dams are border projects, the power is shared equally with the State of Washington.

Four installations in Oregon's Willamette River Basin also serve BPA. They are the Detroit, Lookout Point, Hills Creek, and Cougar Projects. These dams and the three on the Columbia are manned by the Army Corps of Engineers.

Power from three other Federal projects under construction will eventually be marketed by the BPA. These are at Green Peter and Foster, entirely within the State, and the gigantic Oregon-Washington John Day Project being built on the Columbia upstream from the Dalles.

Distribution

The BPA distributes its power through one of the Nation's largest high-voltage grid systems. This network recently was enlarged in Oregon by the installation of more than 200 additional miles of power line. An experimental, direct-current transmission line also has been built in the State. The BPA plant investment in Oregon totals more than $180 million, including 2,700 circuit miles of power lines and substations.

Public power agencies, private utilities, industries, and Federal agencies are counted among BPA's Oregon customers, who buy more than 8 billion kilowatt-hours of electricity a year. Gross revenues come to approximately $21 million annually.

Address inquiries to the Bonneville Power Administration, P. O. Box 3621, Portland, 97208.

Fish and Wildlife Service

The Department of the Interior's Fish and Wildlife Service, in cooperation with the State of Oregon, conducts many programs to enhance the quality and abundance of fish and wildlife resources in the Beaver State.

Among these projects is the Columbia River Program, a cooperative effort which also involves Washington and Idaho, to maintain the Columbia River system as an important salmon and steelhead trout producing area for commercial and sport fishing.

This extensive program, begun in 1949, includes the construction and improvement of State and National hatcheries, the establishment of new salmon runs, a general program of stream improvement, the evaluation of proposed construction projects to determine their effects on salmon runs, and a long-range study to find ways to pass salmon around high dams. This latter phase of the program was launched as an emergency measure to solve the problem of fish passage before contemplated dams can become new barriers to fish migration.

Biological research programs of the Fish and Wildlife Service in Oregon center primarily on species of ocean fish which migrate into fresh-water streams to spawn. The studies involving these anadromous fisheries of the Columbia and Snake Rivers include the biology of the blueback, chinook, and silver salmon, the

A fishway being built around the falls of a Hood River tributary means additional spawning grounds for salmon.

migration of fingerlings, the effectiveness of electrical barriers to guide migration and to control predation of squawfish on salmon. The Fish and Wildlife Service also contracts with the Oregon Fish Commission to carry out fingerling behavior studies and other research in Pelton and North Fork Reservoirs.

The Service conducts an exploratory fishing program off the Oregon coast to locate new fishing grounds inhabited by commercially important species such as ocean perch and Dover sole. This activity is carried out in cooperation with the Oregon Fish Commission aboard the Fish and Wildlife Service vessel *John N. Cobb.*

Another important ocean fisheries research program is conducted in cooperation with the Atomic Energy Commission aboard the vessel *Commando.* This program is providing a survey of deep-water marine fauna in the area southwest of the mouth of the Columbia River at depths ranging from 300 to 6,000 feet. Already this research is providing valuable information on the seasonal distribution of bottom-dwelling fish and invertebrates. The Atomic Energy Commission uses collected marine fauna for radiological analysis. Oregon Fish Commission personnel take part in these studies to establish migration patterns of the Dover sole and sablefish.

Hatcheries and Refuges

The Fish and Wildlife Service administers the Eagle Creek National Fish Hatchery in Clackamas County for producing silver salmon and spring-run chinook salmon and steelhead trout. In a typical year, Eagle Creek distributes more than 5,500,000 salmon and 600,000 steelhead to Oregon waters. National hatcheries in nearby States also send large numbers of fingerlings to the Beaver State. In a typical year, Hagerman National Fish Hatchery in Idaho sends more than 1,400,000 rainbow trout; Carson National

Fish Hatchery in Washington provides nearly 80,000 more rainbow; and the Miles City National Hatchery in Montana supplies about 65,000 fingerling largemouth bass.

Twelve National Wildlife Refuges with a total of about 460,000 acres are maintained in Oregon. Slightly more than half this acreage is in Hart Mountain National Antelope Refuge, 55 miles northeast of Lakeview, in Lake County. Its primary purpose is to provide a habitat for antelope, but it also is important as a refuge for mule deer and sage grouse.

Malheur National Wildlife Refuge is 40 miles south of Burns, in Harney County, and encompasses more than 180,000 acres containing open water, marshes, wild meadows, and wooded areas. This refuge—with more than 200 species of birds and 50 species of mammals—is a mecca for ornithologists and nature students.

The other National Wildlife Refuges and the kinds of wildlife they serve are listed in the earlier chapter on "Fish and Wildlife Resources."

Management Programs

Wildlife Restoration Funds are spent for the development, operation, and maintenance of areas already acquired and for the purchase of land to enlarge existing management units, or provide new ones. The developmental work includes research in the Tillamook Burn to create a deer management program that will be compatible with reforestation. A similar study of mule deer and range is conducted in the Silver Lake area. Researchers are trying to determine the abundance of forage plants required, the influence of forage conditions on the health and productivity of deer, and the population levels that are suitable in artificially reforested areas. There also is extensive work in providing brushy habitats for pheasants, valley quail, and Hungarian partridge in the wheat country of eastern Oregon.

Lake reclamation is a major activity of the fishery management program financed with Federal fish restoration funds. This program includes the use of toxicants to increase the production of more desirable species in the major fishing waters, the improvement of access to streams and lakes, and the installation of fishways.

The Bureau of Sport Fisheries and Wildlife conducts river basin studies to determine the effects Federal construction programs, such as dams, may have on fish and wildlife resources of particular areas. These studies are aimed at maintaining habitats and creating improved conditions for fish and wildlife of the affected areas.

Several Federal game management agents are stationed in Oregon to enforce the Migratory Bird Treaty Act and other laws for conserving wildlife. In addition, the Bureau of Sport Fisheries and Wildlife cooperates with Oregon State agencies, counties, and livestock and forestry associations in controlling predatory animals and birds.

Oregon's Legislature appropriates funds for a Bureau-supervised pilot project to develop economical and effective methods to control European starlings. There are also cooperative predator-control programs directed at coyotes, bobcats, bears, pocket gophers, field mice, ground squirrels, porcupines, and rabbits.

Fisheries Management Offices of the Bureau of Commercial Fisheries, Fish and Wildlife Service, are located in Eugene and Portland. Bureau of Sport Fisheries and Wildlife has a Regional Office including offices for Management and Enforcement, Predator and Rodent Control, and a River Basin Studies Office located at 1001 N.E. Holladay Blvd., P.O. Box 3737, Portland, 97208.

Forest Service

U.S. Forest Service firefighters are highly trained to protect America's great woodlands. Here a fully-equipped firefighter is making a practice jump.

Nearly half of Oregon's commercial forest resources lies within the National Forests, administered by the Forest Service of the United States Department of Agriculture. A constant program of research in forestry, range management, and related fields is maintained to keep these National Forests in top producing conditions. The Forest Service also cooperates with the State Forester in the management and protection of State and private forest lands.

Administration of National Forests

Each of the 14 National Forests in Oregon is administered by a Forest Supervisor and his staff under the direction of a Regional Forester in Portland. Another National Forest, with the bulk of its acreage in California, is administered by a Regional Forester in San Francisco.

The total National Forest area in Oregon covers over 15 million acres, located in the Coastal Region, the Cascade Mountains, and the northeastern quarter of the State. Included in this total acreage are 105,925 acres that comprise the Crooked River National Grassland, rehabilitated agricultural lands now managed under the multiple-use principle. The Forest Service management concepts of multiple-use and sustained yield are applied to all National Forest Lands in Oregon to assure continuous supply of timber, water, forage, wildlife, and opportunities for recreation.

Increased use of the National Forests during the past several years necessitated putting into effect a new "Development Program for the National Forests." This intensifies management and protection activities and is aimed at preventing deterioration of facilities and resources and developing the national resources to meet the projected demands of future years as far ahead as the year 2000.

For Oregon this means the construction of more than 1,600 campgrounds and picnic sites; more than 18,000 miles of roads and some 750 miles of trails, 900 miles of firebreaks, nearly a score of pollution-control and flood-prevention projects, several landing fields and more than 100 heliports and helispots for fire control, 2,000 miles of fence, and more than 1,300 water developments to improve the range resource. Projects include increasing annual timber harvests by 1970, treating and revegetating over one million acres of forest land and over 300,000 acres of range, erosion control, game range improvement, soil surveys, and many other measures designed better to manage, develop, and protect valuable forest resources.

State and Private Cooperation

Many programs involving State and private forest lands are conducted through the cooperative efforts of the Forest Service, private forest owners and managers, and the State Forester of Oregon. These programs include fire control, forest management assistance for private landowners, distribution of trees for planting, and technical assistance for State tree nurseries, marketing of forest products, watershed protection, flood prevention, and forest pest control.

The Forest Service draws on its vast fund of experience to provide financial, technical, and planning assistance to private forest owners. Other Department of Agriculture agencies involved in cooperative conservation programs include the Soil Conservation Service and the Agricultural Stabilization and Conservation Service. The ASCS Committees work out forest-improvement programs for local farmers in keeping with committee standards and pay from 50 to 80 percent of the cost following the satisfactory completion of work.

In the field of forest fire control, cooperation among Federal, State and private forest managers and owners assures that 100 percent of the State's forest area is given protection. In tree planting, the Forest Service nursery at Bend shipped more than 5½ million trees in a recent year, supplementing the additional millions sent by State and private nurseries that were used in the planting of 145,000 acres on public and private lands during the year. Under the Clarke-McNary Act, States produce trees at low cost and distribute them to those who want to reforest their lands. The Forest Service cooperates in financing and technical assistance.

Forest and Range Research

Research regarding the resources of the National Forests and the National Grassland in Oregon is conducted by the Pacific Northwest Forest and Range Experiment Station in Portland for the benefit of both private and public timber managing agencies. Its activities also cover the National Forests in the State of Washington.

Four Oregon field projects located at Bend, Corvallis, Roseburg, and La Grande are engaged in research with applications to specific fields. In Bend, for instance, studies concern the management of lodgepole pine and ponderosa pine and in Corvallis, the management of true fir, mountain hemlock, and Sitka spruce; tree improvement; watershed logging methods; stream flow regulation, biological control of insects, and soil microbiology. In Roseburg, the studies are conducted on mixed sugar pine, Douglas fir, and ponderosa pine, as well as brush field reclamation. In La Grande, management of forest ranges and wildlife habitat are major concerns.

Researchers are working in many areas to control forest enemies such as diseases and insects.

In 1962, a new Forestry Sciences Laboratory was dedicated and became a part of Oregon State University at Corvallis. The laboratory is as an example of cooperation between the Forest Service and other agencies, for the skills of the Federal research workers are joined there with the research programs of the State, private industry, and the university itself. The Pacific Northwest Forest and Range Experiment Station operates the laboratory, where research will be conducted primarily in forest insects and diseases, forest economics, forest management, and watershed problems.

Information on the programs of the Forest Service in Oregon may be obtained from the Pacific Northwest Regional Headquarters, 729 N.E. Oregon Street, P. O. Box 3623, Portland, 97208.

A Geological Survey geologist uses a Brunton compass to measure the slope of the rock structure he is studying.

Geological Survey

The Geological Survey of the Department of the Interior conducts topographical mapping, geological and geophysical surveys, studies of mineral and water resources, and supervises mineral leasing on Federal lands in Oregon. The studies are aimed at increasing the knowledge of Oregon's different mineral and water resources, and of the composition, structure, and history of rocks in the region.

Mineral Investigations

Some of the investigations are in areas known or suspected to contain useful minerals and mineral fuels, such as the John Day area of chromium-bearing rocks, the Quartzburg area of cobalt-bearing rocks, the Klamath Mountain nickle-bearing area, the Newport Embayment, and selected areas where borate deposits are associated with lake deposits of sedimentary rock.

In large areas of south-central and east-central Oregon, reconnaissance geologic mapping is underway to complete preparation of a modern geologic map of the State. Additional geologic mapping is being done in north-central and western Oregon in connection with groundwater and mineral-fuel studies. Geologic studies and maps aid in planning urban developments and major construction projects by providing information on earth materials and their water-bearing character.

Geophysical Studies

Geophysical studies are in progress in several areas in west-central and southwestern Oregon. These include aeromagnetic and gravity surveys to provide information on the structure and character of volcanic basement rocks in western Oregon, and regional gravity studies across a part of the Cascade Range, including the Crater Lake, Roseburg, and Cape Blanco areas in the southwestern part of the State.

Topographic Mapping

Cooperative topographic mapping programs have been carried on in the State intermittently since 1906. The need today is for the more detailed 1:24,000 scale mapping (1 inch equals 2,000 feet), prepared by photogrammetric methods. Increased programs to complete mapping of the State at this scale are being pursued to support the development of natural resources, plan modern highways, and locate potential industrial sites.

At present, about 44,000 square miles or 46 percent of the State is covered by 7½- or 15-minute topographic quadrangle maps. About 18,000 square miles of mapping is in progress under the current cooperative program in Oregon. The entire State is covered by photogrammetrically compiled topographic maps at 1:250,000 scale (1 inch equals nearly 4 miles.)

Water Resources Investigations

The Water Resources Division of the Geological Survey determines and describes the quantity and quality of Oregon's surface and underground water, whether under natural conditions or under conditions of present or potential development and use by man. Investigations are planned specifically to obtain information on distribution, supply, chemical quality and sediment load, pollution, water temperature, flood, and variability problems.

Basic facts on streamflow and lake stage are collected continuously at 325 sites in Oregon with temperature data collected at 35 of these sites. Basic data on the quality of surface waters are collected at 45 sites. Ground water investigations are in progress at East Portland, Eola-Amity Hills, French Prairie, Molulla-Salem slope, and Salem Heights (all in the Willamette Valley); Rogue River Basin; Fort Rock Basin (Lake County), and the Bend-Tumalo District (Deschutes County). A compilation and evaluation of all available water temperature information within the state are also in progress.

Much of the water resources investigation in Oregon is carried out in cooperation with other Federal, State, and local agencies. Water Resources Division Offices are located in Eugene, La Grande, Medford, Salem, and Portland.

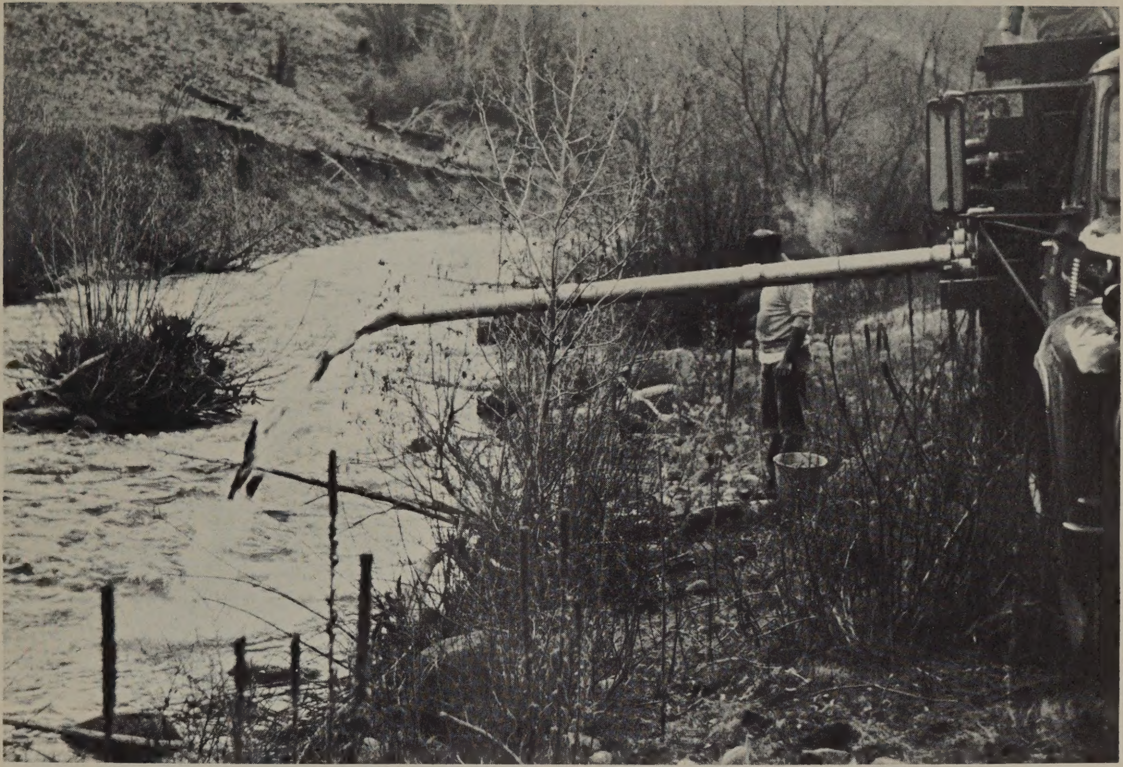
Classification Activities

Geological studies have been conducted on certain coal lands in Coos County. Reports on the waterpower and water supply of Trask, Alsea, and Nehalem Rivers and the storage and powersite withdrawals in the McKenzie and Middle Fork Willamette River Basins have been prepared. Studies are underway to determine the storage capacity of reservoir sites in the Donner und Blitzen, North Umpqua, Silvies, Siletz, and Siuslaw River basins. The reports include preliminary geological examinations undertaken in the damsite areas.

Mineral Leasing Operations

More than 200 oil and gas leases in Oregon, covering 143,000 acres, are supervised by the Geological Survey. Permits have been approved for conducting geologic and geophysical explorations on the outer continental shelf of the State.

Information on other geologic work in progress in Oregon may be obtained from the State's Department of Geology and Mineral Industries, 1069 State Office Building, Portland.



The planting of rainbow trout is a mechanized operation on the Warm Springs Indian Reservation.

Bureau of Indian Affairs

The overall aim of the Department of the Interior's Bureau of Indian Affairs program in Oregon is threefold: maximum Indian socio-economic self-sufficiency, full participation of Indians in American life, and equal citizenship privileges and responsibilities for Indians. To achieve these goals, the Bureau puts major emphasis on greater development and use of both human and natural resources on Indian reservations.

A variety of Federal services reflects this emphasis, including construction and maintenance of roads serving reservation areas, provision of credit to finance economic enterprises, and assistance in adult vocational training and relocation for employment. The Bureau also supplies social services and counseling in the use of Indian funds, dormitory housing at Warm Springs for Indian children attending local public schools, and aid to the tribal groups in attracting industries which will provide jobs for Indian workers.

Oregon is one of several States which have assumed full responsibilities for educating Indian children in the public schools without financial help from the Bureau of Indian Affairs. The Bureau, however, continues to operate the Chemawa Boarding School, near Salem, for older Navajo and Alaska native children who have little or no previous education, due to lack of facilities in their home communities.

Information on Indian reservations and the programs of the Bureau of Indian Affairs in Oregon may be obtained from the Area Office, 1001 N.E. Holladay Blvd., P.O. Box 3737, Portland, 97208.

Bureau of Land Management

As the Nation's largest administrator of public lands, the Bureau of Land Management is responsible for 15.5 million acres in Oregon or about 25 percent of the land area of the State. About 4 million acres are forests and woodlands and the rest is range. BLM resource-management programs in Oregon include range, forestry, recreation, lands, minerals, wildlife, and watersheds. There are 10 BLM resource management districts in Oregon located at Salem, Eugene, Roseburg, Coos Bay, Medford, Lakeview, Burns, Prineville, Baker, and Vale.

Each BLM district is administered by a District Manager and his staff under the supervision of a State Director in Portland.

Forest Management

The most intensive Federal forest management program in the Nation centers on the 2-million-acre Oregon and California Grant Lands forest in western Oregon, administered by BLM. The Oregon and California Sustained Yield Act of 1937 was the first law providing for sustained yield management and multiple use management on Federal forest lands. It paved the way for similar programs on National Forests and private timber lands.

Today, the O&C lands maintain their position as a showcase of scientific forest management. Over a billion board feet of timber is sold on the O&C forest every year, providing annual revenues of about $30 million. The 18 counties in which the O&C forest is located are entitled to 75 percent of the revenues from the lease and sale of O&C resources. This is an important source of funds for public schools, roads, and other services.

For many years the counties have declined to accept one-third of their O&C revenues and Congress has appropriated an equal amount to BLM for construction of roads, reforestation, recreation development, and other activities to improve the forest. This has been an important capital investment in the public lands of Oregon brought about through the cooperation of local government.

BLM has maintained a continuous inventory of the O&C forest since passage of the O&C Act. Since 1937 the annual allowable cut on the O&C has risen from about 500 million board feet on 2.5 million acres to 1.127 billion board feet on 2 million acres.

Intensive management of young growth timber is becoming increasingly important in western Oregon as the supply of virgin timber diminishes. BLM has launched a study of young growth forest management on a 56,000-acre tract in northeastern Oregon. Information from this study, which is being carried out in cooperation with the Forest Service, will be made available to public and private forest managers.

The BLM maintains a reforestation program on the O&C forest, including planting, seeding, brush removal and control, rodent control, and removal of dead trees.

The BLM also cooperates with State agencies and the Forest Service in research projects and in programs to control insects and diseases.

Range Management

There are about 12.5 million acres of public range lands in Oregon. Range managers estimate that Oregon's range will support three to four times the present number of livestock and wildlife if properly developed and managed. To this end, one of the most intensive resource management programs in the Pacific Northwest is being conducted in the five eastern Oregon BLM districts.

Most of the public range is concentrated into organized grazing districts. Livestock operators who meet certain qualifications are permitted to run specific numbers of livestock on the range for specific periods. For this privilege they pay the Government an established fee.

When permits or licenses are issued for commercial grazing on public lands a certain amount

A public land access road takes shape as a Bureau of Land Management engineering team runs a preliminary survey.

of forage is always reserved for wildlife use. Areas where deer concentrate in the winter receive special consideration, and BLM cooperates fully with State and Federal game management agencies in identifying and managing such areas.

The BLM continually conducts range resource surveys on the public grazing lands to determine whether use of the resource is in or out of balance with its capacity.

Range-improvement projects which increase production and help protect soil and water values include brush and weed control, grass seeding, water development, erosion-control structures, fencing, cattle guards, and closer utilization of forage. BLM cooperates with game management agencies in improving wildlife habitat on public range lands.

The Bureau of Land Management also works closely with the Agriculture Research Service at the Squaw Butte Range Experiment Station, near Burns, and with the Agriculture Extension Service of Oregon State University, Corvallis, in range management research projects.

The Vale Project

In southeastern Oregon, BLM has launched the largest and most intensive range-improvement project ever carried out in the United States. The Vale Project includes all of Malheur and parts of Harney and Grant Counties.

Range betterments, such as brush control, revegetation, wildlife habitat improvement, and water development are being performed. Roads are being constructed into previously inaccessible areas, public recreation facilities will be installed, and some of the ranges are being fenced for better livestock management. Watersheds are undergoing treatment to reduce erosion and increase their water yields. Fire detection and protection facilities are being improved. BLM is also carrying out a program of conservation education to help livestock operators improve their grazing operations.

The Vale Project is designed to restore the area's full resource production potential—which had greatly deteriorated because of misuse of range resources in the past. The Vale Project already has brought forth new information and techniques, and it has been an important stimulus for improved range management throughout the western United States.

Recreation

Planning for recreational development of the public lands has become a major consideration in BLM management. The O&C Act is a multiple-use law and under its authority BLM has constructed more than 50 public recreation sites in western Oregon. The public domain offers many opportunities for extensive recreation and BLM has worked to improve access to public lands for that type use.

The BLM, assisted by the National Park Service, another Interior agency, has completed a recreation inventory of all its lands in Oregon and has identified several hundred sites for future recreational development.

Lands and Minerals Management

Mining and mineral leasing laws are administered by the Department of the Interior through its Bureau of Land Management for all Federal lands in Oregon as they are in other public land States. This includes the Outer Continental Shelf beyond the three-mile State limit.

Under its Master Unit System of public land inventory and classification, BLM has divided Oregon into areas of similar physical and economic characteristics. The public lands in these units are evaluated as to their highest and best uses, and this information forms the basis for developing resource management programs.

To satisfy local public and private needs for public lands and resources, BLM contemplates certain land-tenure adjustments such as transfer of title and land uses under the general public land laws, including recreation and public purposes sales and leases; State and private exchanges; small tract sales and leases for recreation, residential and business purposes, and public sales; rights-of-way, and, mineral material sales.

Public Land Records and Surveying

The Land Offices of BLM, located in Portland, contain the official records of all of the Federal Government's public land transactions.

Also, BLM is responsible for the survey and boundary monumentation of all public lands held by the Federal Government. This includes the survey and mapping of the Outer Continental Shelf.

Further information on the activities of the Bureau of Land Management in Oregon may be obtained from the State Office, Bureau of Land Management, 710 N.E. Holladay Blvd., Portland, 97232.

The new visitors' center at Fort Clatsop near Astoria, Oreg., is part of the National Parks Service "Mission 66."

National Park Service

The National Park Service administers Crater Lake National Park, Fort Clatsop National Memorial, and Oregon Caves National Monument in Oregon and has designated McLoughlin House in Oregon City as a National Historic Site, and Fort Astoria and Fort Rock Cave as Registered National Historic Landmarks. All have been described earlier in this book.

Under a continuing long-range development program, the National Park Service is making progress in its improvement plans for units of the National Park Service in Oregon. The objectives of the MISSION 66 program, started in 1956 and scheduled for completion in 1966, are to develop and staff National Park Service areas to encourage public enjoyment of them while assuring protection of the areas' scenic, scientific, and historic values.

Other functions of the Service include advice to State, local, and other Federal agencies on planning and management of parks, parkways, and recreation areas and construction of recreation facilities, and investigation and salvage of historical and archeological sites.

The Park Service is making plans for a proposed Oregon Dunes National Seashore. Situated in Lane, Douglas, and Coos counties, within a 30- to 40-mile section of the south central Pacific Coast, the proposed seashore would incorporate a magnificent display of shifting coastal sand dunes and inland freshwater lakes. The Oregon Dunes National Seashore would consist of about 44,600 acres of land. Over 70 percent of the proposed area is in public ownership—mostly National Forest. The remainder is in private holdings with homes and cottages located principally on the lakeshores.

The real accomplishments of the Park Service's long-range programs are measured not by miles of trails, shelters, walks, and driveways, but how well the program as a whole accomplishes the purpose of national parks—to preserve the Nation's heritage in wild lands, scenery, and historic treasures for the enjoyment and inspiration of all Americans for all time.

Information on National Parks in Oregon and the activities of the National Park Service may be obtained from the Western Region Office, 180 New Montgomery Street, San Francisco, Calif., 94105, or from Public Information Inquiries, National Park Service, Department of the Interior, Washington, D.C.

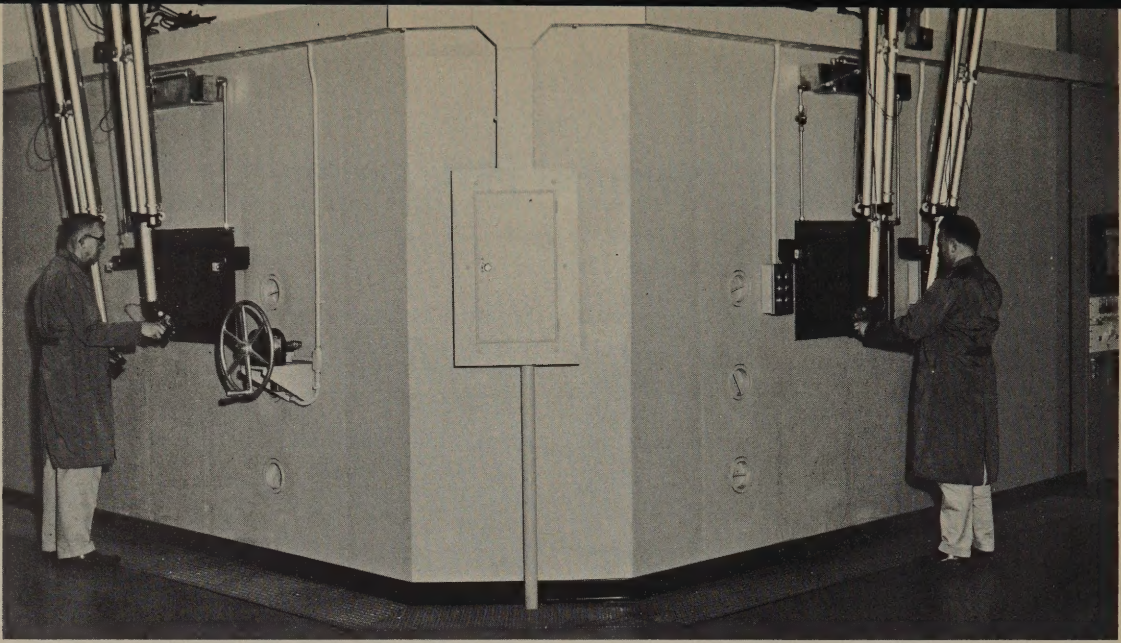
Bureau of Mines

On property purchased from Albany College in 1942, the Bureau of Mines of the Department of the Interior established one of its major scientific installations—the Albany Metallurgy Research Center. From this Oregon center have come many important developments that benefit the entire Nation.

Metallurgical Studies

The Albany center is the scene of research that brought important new industries to Oregon and to other parts of the country. These fruitful studies began in 1945, when Bureau scientists at Albany, using a mineral concentrate derived from Oregon beach sands, undertook investigations resulting in the development of the methods now used in industry to make zirconium and hafnium. Both these metals, scarcely known two decades ago, now are essential to America's nuclear-energy and defense programs. Zirconium made possible the building of the first atomic-powered submarine, and hafnium performs important shielding functions in nuclear reactors. Today, these metals are produced commercially within a short distance of the Bureau of Mines Laboratories.

Scientists at the Albany center also demon-



Bureau of Mines researchers operate robot-like machine handling radioactive materials at the Albany laboratory.

strated the technical feasibility of a process for continuous electric smelting of low-grade nickel ores. Although the process has not been adopted commercially, industrial interest in it played a significant role in fostering development of the nickel-silicate deposit at Riddle, one of the few domestic sources of this strategic metal.

Scientists at the Albany center have also contributed high-purity chromium wire which, in irradiated form, has shown promise as an aid in treating cancer, and a novel casting technique that was used to produce the world's first shape-casting of molybdenum metal. Such Space Age metals as columbium, tantalum, and tungsten are being produced experimentally in extremely pure form by Bureau researchers.

Atomic Research

An atomic-research facility at Albany is used in studies to determine the effects of gamma radiation on the physical and chemical properties of metallic and nonmetallic minerals and mineral fuels. This new structure, housing 100,000 curies of cobalt-60 supplied by the Atomic Energy Commission, may also help advance mineral technology, either by showing how properties of minerals and fuels may be altered for easier processing, or by developing ways actually to speed chemical reactions in mineral-treating processes.

Mineral Development

To promote more extensive development of Oregon's mineral resources, Bureau engineers are investigating and evaluating the State's potential as a source of beryllium and tellurium, which have possible applications in electronics, thermoelectrics, and space exploration. Investigations by the Bureau have indicated that certain clays found near Salem, in Marion County, may have commercial value as refractories, and other tests have shown that material suitable for making amber glass can be obtained from Coos County dune sands. Other studies seek methods for recovering tungsten from Jackson County deposits, copper from minerals in Josephine County, and mercury from Malheur County ores.

Comprehensive economic studies of selected Oregon industries, including those producing iron and steel and ferroalloys and aluminum, have been published by the Bureau of Mines, helping to promote a wider understanding of the State's mineral heritage and the importance of mineral conservation.

The Bureau of Mines regularly publishes statistics regarding Oregon's mineral production.

Further information on the minerals of Oregon and the programs of the Bureau of Mines may be obtained from the Regional Office, P.O. Box 492, Albany.

Bureau of Outdoor Recreation

Although the Bureau of Outdoor Recreation manages no lands, recreation areas or facilities, its functions are important to residents in and visitors to every State.

The Bureau provides a focal point for outdoor recreation programs and related activities in the Federal Government. It serves as a point of contact on recreation matters for regions, States, and their political subdivisions, organizations and individuals. In turn the Oregon State government has named the Oregon Committee on Natural Resources as a point of contact to work with the Bureau in future State-Federal recreation planning and development.

Creation of a Federal Bureau of Outdoor Recreation was one of several recommendations resulting from three-year studies by the Outdoor Recreation Resources Review Commission of America's outdoor recreation resources, needs and demands. The Bureau was established in the Department of the Interior April 2, 1962. A year later, Congress enacted Public Law 88–29, a basic outdoor recreation law.

Public Law 88–29 states that Congress "finds and declares it to be desirable that all American people . . . be assured adequate outdoor recreation resources, and that it is desirable for all levels of Government and private interests to take prompt and coordinated action to the extent practicable . . . to conserve, develop, and utilize such resources for the benefit and enjoyment of the American people."

The new law authorizes the following·

Preparation and maintenance of a continuing inventory of the outdoor recreation needs and resources of the United States;

Preparation of a system for classifying outdoor recreation resources;

Formulation and maintenance of a nationwide outdoor recreation plan;

Provision of technical assistance to and cooperation with the States, their political subdivisions and private interests;

Encouragement of interstate and regional cooperation in outdoor recreation planning, acquisition, and development;

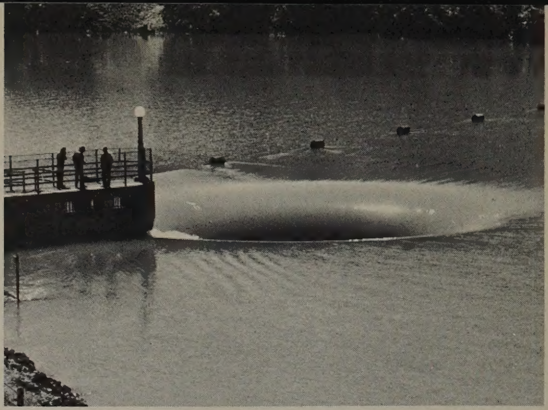
Encouraging interdepartmental cooperation and promotion of coordination of Federal plans and activities generally relating to outdoor recreation; and

Acceptance and use of donations for outdoor recreation purposes.

Authority for these activities resides in the Secretary of the Interior and has been delegated by him to the Director of the Bureau of Outdoor Recreation. These authorities provide means for stimulating increased Federal, regional, State, and local outdoor recreation activity. The program is particularly designed to strengthen States in their key role of providing for the future recreation needs of their citizens.

Wading in a cool, clear mountain stream can be as relaxing for adults as it is adventurous for the small fry.

Bureau of Reclamation



A close-up view of the "glory hole" spillway discharging water at Reclamation's Owyhee Dam in Oregon.

Of the 1.5 million acres of irrigated Oregon land, nearly 460,000 are supplied with water wholly or partly by facilities of the Department of the Interior's Bureau of Reclamation. The Bureau's 14 Oregon projects are located in almost every geographical area of the State. They help account for nearly $50 million worth of crops and forage annually.

These projects range in size from the 2,100-acre Wapintia Project in Wasco County to the 100,000-acre Deschutes Project in Central Oregon. The Owyhee Project serves almost 34,000 acres of Idaho land as well as 85,000 acres in Oregon.

Construction Program

Only one Oregon Reclamation Project currently includes power generation among its facilities. This is the Rogue River Basin Project in the southwest, where the Green Springs Powerplant has an installed capacity of 16,000 kilowatts.

The Bureau's construction program has been continuing in Oregon for 50 years, and two major projects have recently been completed. The biggest is the multipurpose Talent Division of the Rogue River Basin Project. It will provide supplemental water to almost 24,000 acres, generate 16,000 kilowatts of electricity, and assist in flood control for the area.

The Howard Prairie, Emigrant Prairie, and Hyatt Prairie dams and reservoirs are also included in the Talent Division.

The Bully Creek Extension of the Vale Project is the other major installation nearing completion. An earth-fill dam on Bully Creek will build up a 32,000 acre-foot reservoir to help relieve water shortages in the Vale Project, which serves 35,000 acres in the eastern part of the State.

Construction was recently completed on the Prineville Dam on the Crooked River, which now provides irrigation water for almost 20,500 acres. The Prineville Reservoir and the rehabilitated Ochoco Reservoir, nearby, are important for recreation, fish and wildlife habitat, and flood control.

Supplemental Water

A full water supply for more than 3,200 acres of land will be provided by additions to The Dalles Project, utilizing Columbia River water and a pipe distribution system. This program will also supply supplemental water to 2,200 acres of land adjacent to the city of The Dalles.

In addition to these active projects, plans have been made for an Upper Division addition to the Baker Project in east-central Oregon. The authorized project includes a Powder River dam that will create a 100,000-acre-foot reservoir, providing a full water supply to 5,400 acres of land and a supplemental supply to 12,600 acres. The Baker Project itself dates back to 1909.

The Bureau of Reclamation's general investigations program for Oregon involves reconnaissance studies, a basin survey and eleven investigations of projects or divisions of projects. Not counting the basin survey, these investigations consider the development of 270,000 acres of land, the possibilities of installing hydroelectric plants for generating 625,000 kilowatts, and the supplemental irrigation of 250,000 acres.

Further information on Bureau of Reclamation projects in Oregon may be obtained from the Regional Director, Bureau of Reclamation, P.O. Box 937, Boise, Idaho, 83701.

Oregon is a progressive and diligent guardian of its wealth. Natural grandeur marks the Three Sisters Wilderness Area.

The Future

Oregon, the Beaver State, is an area rich in natural resources of land, water, timber, fish and wildlife, as well as tremendously endowed with scenic beauty, historical significance, and great recreational wealth.

The State will continue to progress because the people of Oregon know the value of wise conservation, intelligent development, sustained management, and prudent use of the resources which Nature has bequeathed them.

Living in a great timberland region teeming with valuable fur-bearing animals that was for a time despoiled by man, the people of Oregon have become progressive and diligent guardians of their wealth, working to insure the future of their area.

Federal natural resource agencies have played an important role in building the Beaver State and will continue in the years ahead to contribute to Oregon's growth.

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(Back cover) Picknickers at Sunset Bay State Park are silhouetted at twilight by a setting sun and campfire.

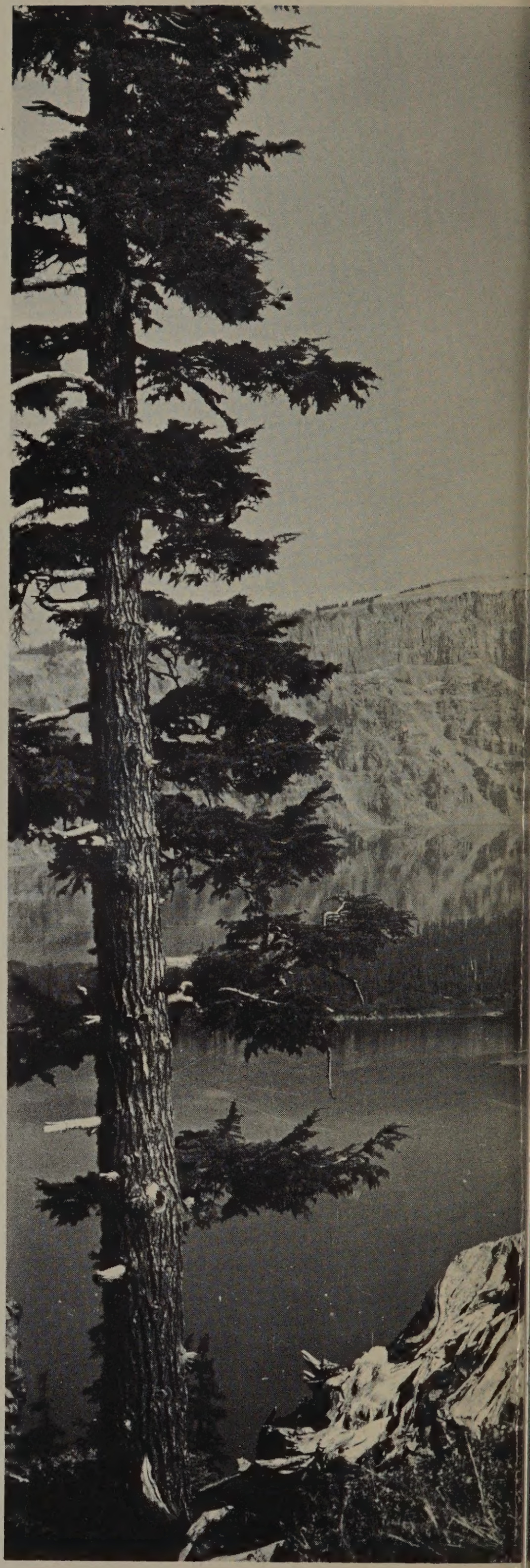
Acknowledgments

The Department of the Interior is indebted to the following for illustrations appearing on pages as indicated:

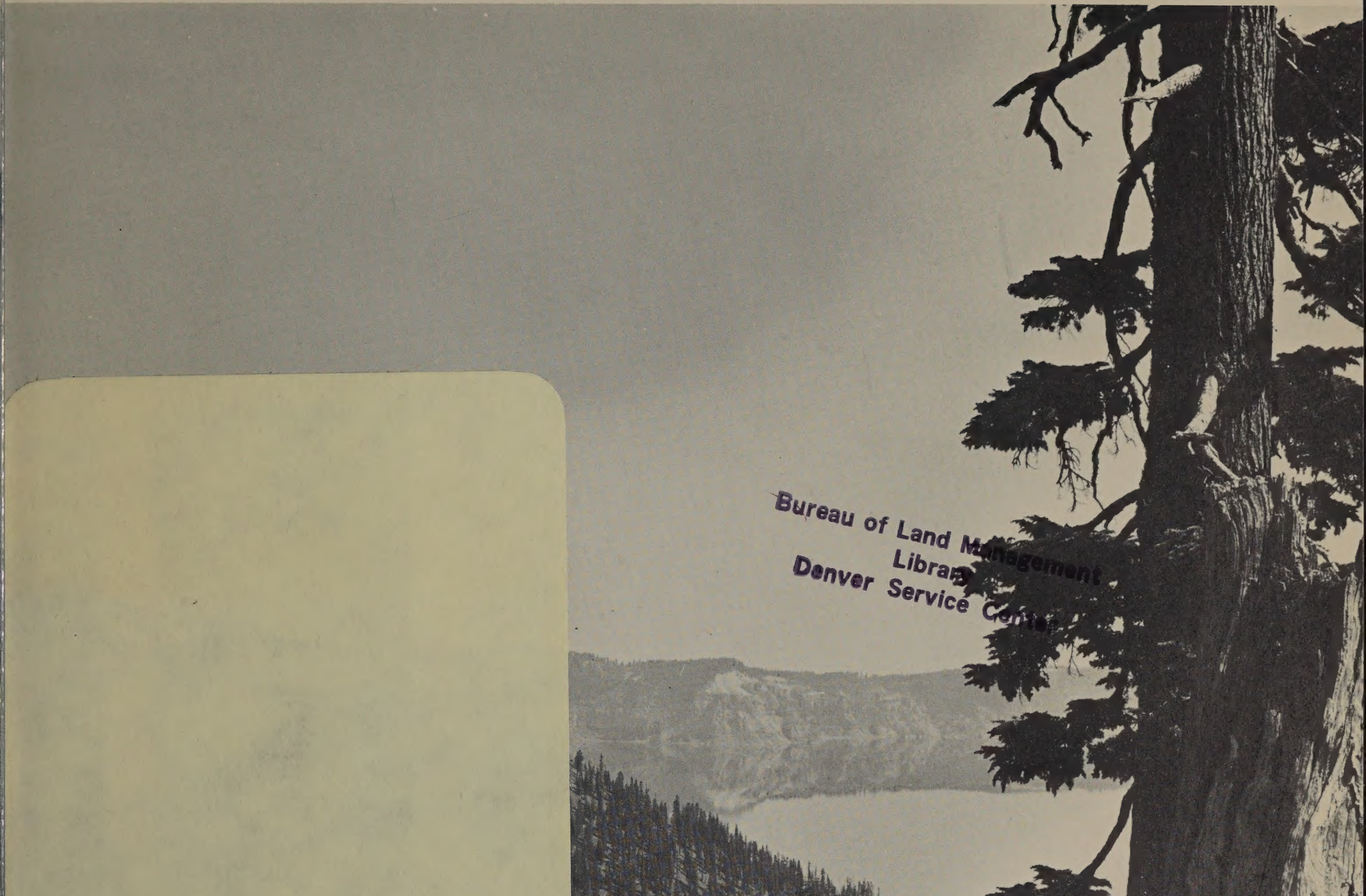
> U.S. Army Corps of Engineers, pp. 21 (center), 22, 25 (below and upper left), 50; Forest Service, U.S. Department of Agriculture, pp. 29 (left), 36 (below), 55, 67; McLoughlin Memorial Association, p. 9 (right); Oregon Historical Society, p. 9 (left); Oregon State Highway Department, inside front cover, pp. 5 (upper right), 7, 10, 11, 13, 14, 15 (below), 17, 21 (below), 27, 28, 29 (right), 32 (below), 33 (below), 35, 36 (top), 37, 38, 41.

The Department also gratefully acknowledges the assistance of the Forest Service, United States Department of Agriculture, and the United States Army Corps of Engineers, Department of Defense, for certain textual material appearing in this publication.

The "Natural Resources of Oregon" is one of a series of publications on various States. Similar booklets on the States of Washington, Montana, Colorado (each 50 cents), Ohio, Arizona, Massachusetts (each 45 cents) are also for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.



(Right) Wizard Island is actually a volcano within a volcano near the west shore of Oregon's Crater Lake.



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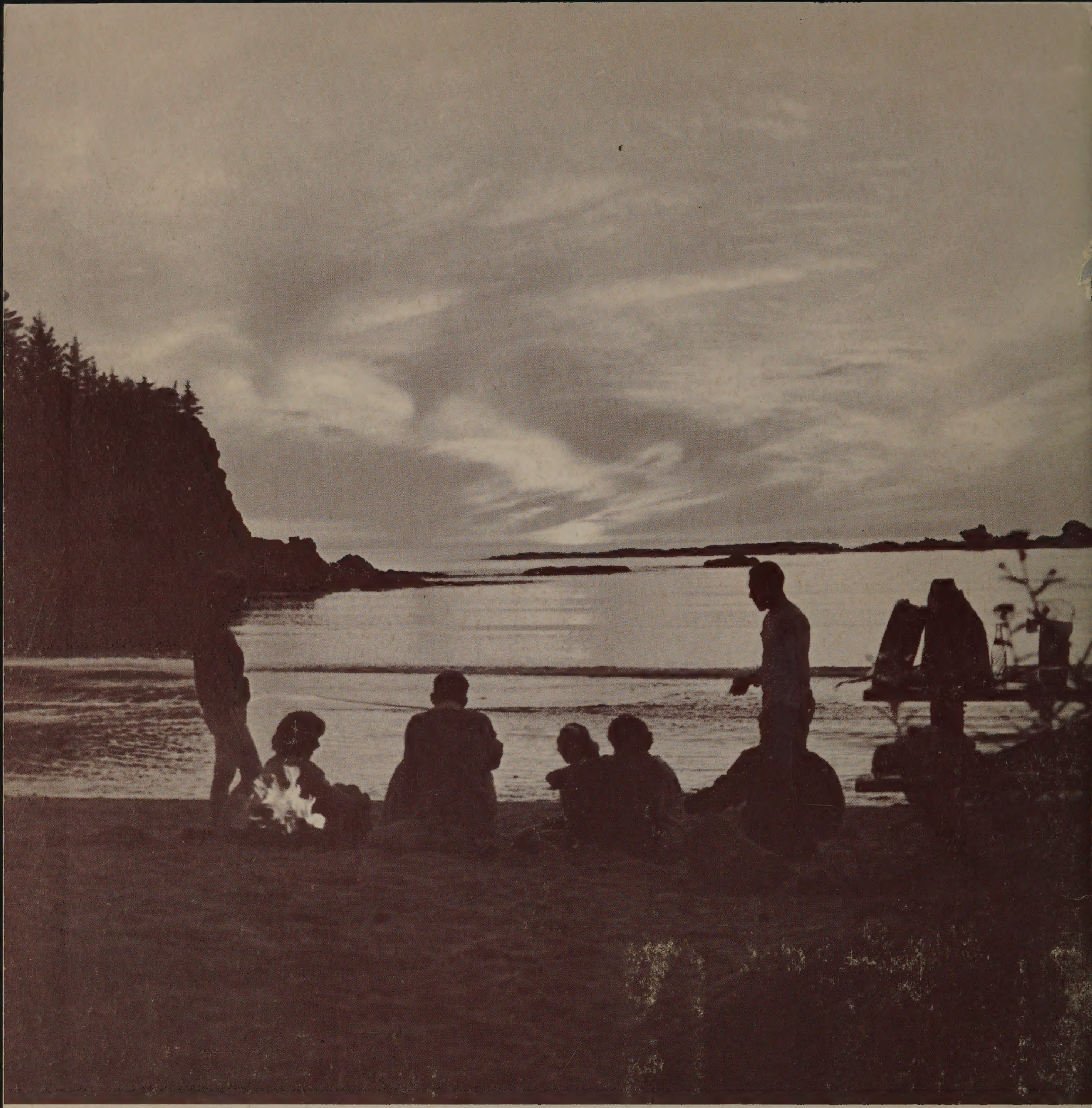

STATE OF OREGON
1859

Created in 1849, the Department of the Interior—a Department of Conservation—is concerned with the management, conservation, and development of the Nation's water, fish, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States—now and in the future.

March 3, 1849